View of Middle Bald Mountain from the Killpecker Site.

MIDDLE BALD MOUNTAIN AREA COMMUNICATION SITE

DRAFT ENVIRONMENTAL IMPACT STATEMENT
JUNE 2014

USDA FOREST SERVICE
ROCKY MOUNTAIN REGION
ARAPAHO AND ROOSEVELT NATIONAL FORESTS
PAWNEE NATIONAL GRASSLAND

Middle Bald Mountain Area Communication Site
Draft Environmental Impact Statement
Larimer County, CO

Lead Agency: USDA Forest Service

Responsible Official: Glenn P. Casamassa, Forest Supervisor
Arapaho and Roosevelt National Forests and Pawnee National Grassland

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Abstract

The Arapaho and Roosevelt National Forests and Pawnee National Grassland (ARP) is preparing an Environmental Impact Statement (EIS) for the Middle Bald Mountain Area Communication Site in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC §4321 et seq.), the Council on Environmental Quality regulations implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and the United States (U.S.) Forest Service (Forest Service) NEPA implementing regulations (36 CFR Part 220).

The purpose of and need for this action is to provide expanded and more-reliable, all-weather emergency communications capabilities in north central Larimer County, including additional reaches of the Poudre Canyon. VHF radio coverage is presently poor or nonexistent in the mountainous northwest part of the County, including the Poudre Canyon (Colorado Highway 14), Red Feather Lakes, Crystal Lakes subdivision, Glacier View Meadows subdivision, and areas in the Roosevelt National Forest (Pericle 2009). The need for this action is to improve public safety communication capability, add capacity for an 800 MHz frequency, and reliability so fire and medical first-responders, law enforcement, other government public safety and public service agencies (i.e., volunteer fire departments, Larimer County Search and Rescue, the Forest Service, and other government entities) can provide quicker and better assistance to area residents and recreational visitors during both emergency and routine incidents in those areas.

Under the proposed action the Forest Service would issue an authorization to Larimer County to construct and operate a government-only radio communications facility on Middle Bald Mountain for both VHF and 800 MHz communications. The proposed action would include:

- an approximately 70-foot high, 3-legged steel lattice tower near the summit of Middle Bald Mountain;
- an approximately 200 square-foot equipment building in the meadow near the tower, including a 20 kilowatt diesel generator separate from the building as backup if electric power is interrupted;
- an approximately 10-foot wide access road during construction from NFSR 517 to the edge of the trees on the west border of the open meadow;
- approximately 12 miles of power line (route described below); and
- a connected action tied to an authorization to Poudre Valley Rural Electric Association for construction, operation, and maintenance of the power line to serve the communication site.

Three alternatives are considered in detail, including the No Action Alternative, Proposed Action, and

the Environmentally Preferred Alternative, which is similar to the Proposed Action but locates the communication tower and related facilities at a site located approximately 1/2 mile northwest of the Middle Bald Mountain summit. The Environmentally Preferred Alternative (Killpecker Site) is the Forest Service's preferred alternative.

This Draft EIS discloses the direct, indirect, and cumulative environmental impacts resulting from the proposed action and alternatives. Reviewers should provide the Forest Service with their comments during the review period of the draft environmental impact statement. This will enable the Forest Service to analyze and respond to the comments at one time and to use information acquired in the preparation of the final environmental impact statement, thus avoiding undue delay in the decision making process.

Comments on the draft environmental impact statement should be specific and should address the adequacy of the statement and the merits of the alternatives discussed (40 CFR 1503.3).

Draft EIS Comments

Comments on this DEIS will be accepted for 45 days from publication of the Notice of Availability (NOA) in the Federal Register. The NOA provides the sole means of calculating the close of the DEIS comment period. The NOA was published July 11th, 2014. Comments on the Draft Environmental Impact Statement must be received at the address provided below no later than: August 25th, 2014

Send written comments to:

Middle Bald Communication Site Comments
c/o Logan Simpson Design
123 North College Avenue, Suite 206
Fort Collins, CO 80524
E-mail: MiddleBald@logansimpson.com

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Acronyms and Abbreviations

amsl	above mean sea level
APLIC	Avian Power Line Interaction Committee
ARP	Arapaho and Roosevelt National Forests and Pawnee National Grassland
BG	background
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CDPHE	Colorado Department of Public Health and Environment
CESA	cumulative effects study area
CNHP	Colorado Natural Heritage Program
CPW	Colorado Parks and Wildlife
CWA	Clean Water Act
DAU	Data Analysis Unit
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FG	foreground
Forest Service	U.S. Forest Service
FSS	Forest Service Sensitive species
GL	guidelines
GMU	Game Management Unit
HUC	hydrologic unit code
KOP	key observation point
kV	kilovolt
MA	Management Area
MBTA	Migratory Bird Treaty Act
MG	middleground
MIS	Management Indicator Species
NDIS	Natural Diversity Information Source
NEPA	National Environmental Policy Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OHV	off-highway vehicle
Pericle	Pericle Communications Company
RFR	radio frequency radiation
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objective
SMS	Scenery Management System

ST	standards
TES	Threatened or Endangered species
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTV	utility terrain vehicle
VHF	very high frequency

Middle Bald Mountain Area Communication Site
Draft Environmental Impact Statement

Larimer County, CO

Executive Summary

EXECUTIVE SUMMARY

Introduction

The Arapaho and Roosevelt National Forests and Pawnee National Grassland (ARP) is preparing an Environmental Impact Statement (EIS) for the Middle Bald Mountain Area Communication Site in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC §4321 et seq.), the Council on Environmental Quality regulations implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and the United States (U.S.) Forest Service (Forest Service) NEPA implementing regulations (36 CFR Part 220).

Project Location

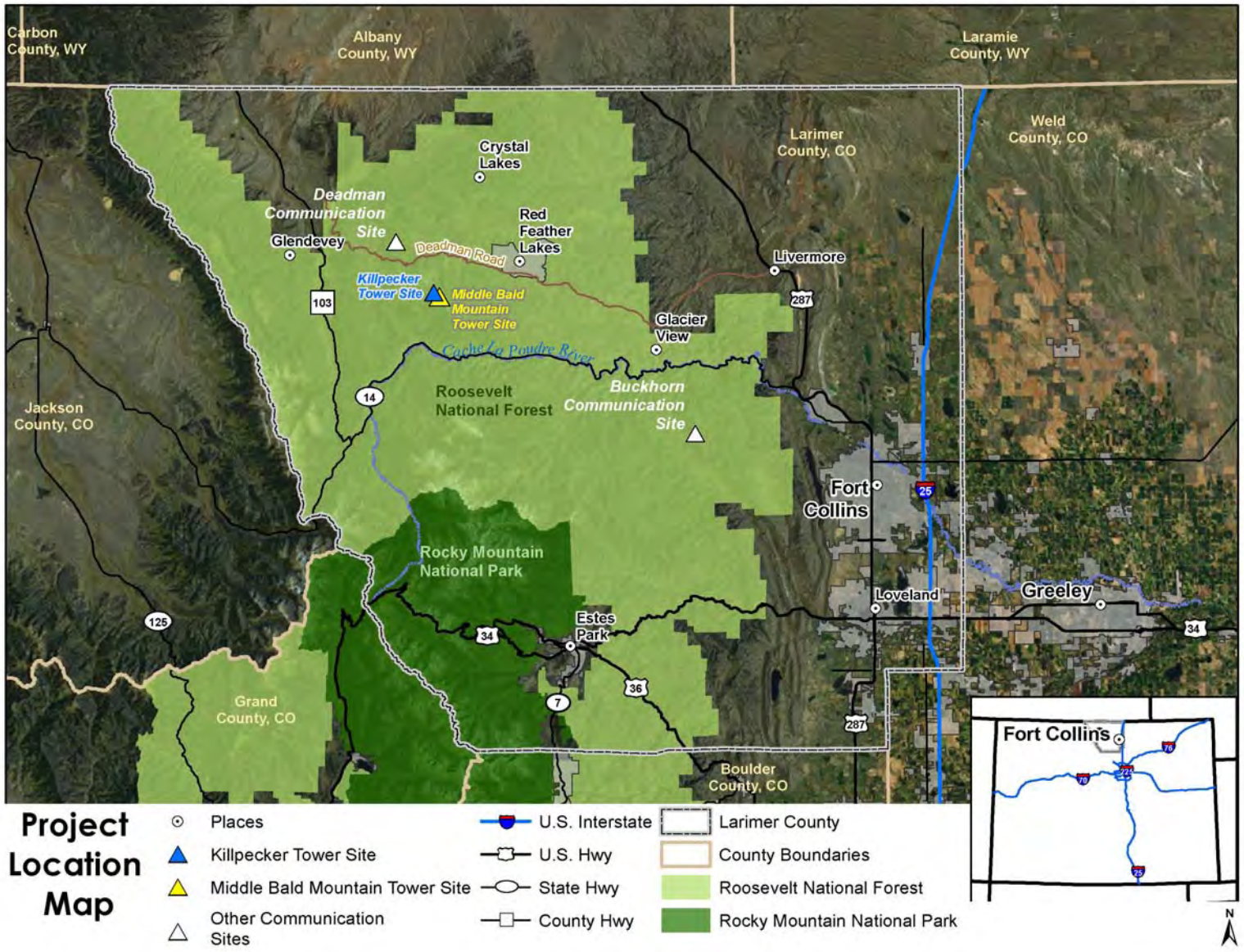
Larimer County, in north central Colorado, encompasses both the rugged terrain of the Rocky Mountains to the west and the Great Plains to the east. Situated on the eastern side of the Continental Divide, Larimer County is a gateway to the Roosevelt National Forest and Rocky Mountain National Park. The proposed project is located in the Deadman Geographic Area. (**Figure S-1**).

Background Summary

The Poudre Canyon has experienced constantly increasing numbers of recreationist and sight-seer incidents requiring emergency response both in the Canyon and on the river, and ever-increasing numbers of private homes being built in Red Feather Lakes, Crystal Lakes subdivision, Glacier View Meadows subdivision, within the Canyon and in the rugged foothills to the north. As a result of this increasing traffic and use, emergency responders such as law enforcement, wildland and volunteer firefighters, and search and rescue organizations find the existing Deadman Communication Site does not provide adequate emergency and public service radio communication coverage and/or signal strength in north-central Colorado, particularly in the Poudre Canyon. Larimer County and the Forest Service currently have VHF (very high frequency) public service and emergency radio communications equipment at the Deadman Communications Site, located on the Roosevelt National Forest north and west of the Red Feather Lakes area in Section 13, Township 10 North, Range 75 West in Larimer County. Co-located with the County's equipment are State of Colorado and City of Fort Collins radio communication facilities. Area volunteer fire departments and search and rescue organizations do not have radio equipment at the Deadman site, but they utilize the County's radio equipment and frequencies when responding to emergencies in north-central and north-western Colorado. AT&T Cellular has commercial cellular communications equipment located at the Deadman site, as well. There is no commercial power at the Deadman site; all radio and cellular communication facilities there are currently powered by very small solar arrays.

Adding to this situation, the State and County have made the decision to convert to the nationwide 800 MHz emergency radio communication system. A functional statewide 800 MHz network requires an 800 MHz radio communication facility somewhere in the north-central Colorado area. While the Deadman Communication Site could fill that gap, an 800 MHz system is active at all times, unlike VHF which is only activated when a microphone is keyed. The lack of commercial electrical power at the Deadman site would be problematic, as large solar and/or wind and/or generator power facilities would otherwise be essential to power 800 MHz facilities there. However, even if commercial power were available, the Deadman site would not provide adequate coverage or signal strength for an 800 MHz system in north-central Colorado or in the Poudre Canyon (Pericle 2009).

Figure S-1 Project Location Map



PURPOSE AND NEED

The purpose of and need for this action is to provide expanded and more-reliable, all-weather emergency communications capabilities in north central Larimer County, including additional reaches of the Poudre Canyon. VHF radio coverage is presently poor or nonexistent in the mountainous northwest part of the County, including the Poudre Canyon (Colorado Highway 14), Red Feather Lakes, Crystal Lakes subdivision, Glacier View Meadows subdivision, and areas in the Roosevelt National Forest (Pericle 2009). The need for this action is to improve public safety communication capability, add capacity for an 800 MHz frequency, and reliability so fire and medical first-responders, law enforcement, other government public safety and public service agencies (i.e., volunteer fire departments, Larimer County Search and Rescue, the Forest Service, and other government entities) can provide quicker and better assistance to area residents and recreational visitors during both emergency and routine incidents in those areas.

PUBLIC INVOLVEMENT

Scoping

Public involvement activities undertaken during the EIS scoping period include publication of the Notice of Intent; public outreach through a project website; hard copy or email distribution of a scoping letter to the project mailing list; distribution of a press release; and public open house scoping meetings. The complete scoping summary report is available for download from the project website located at: http://www.fs.usda.gov/goto/arp/middlebald.

A Notice of Intent to prepare an EIS was published in the *Federal Register* on September 14, 2012 (**Appendix A**). The Notice of Intent invited public participation in the EIS scoping process and solicited public comments on the scope of the EIS during a 45-day scoping period that commenced September 14, 2012, and ended October 29, 2012.

The Forest Service held public scoping meetings for the Middle Bald Mountain Area Communication Site on October 9, 2012, from 2 to 7 p.m. at the Forest Supervisor's Office, Continental Divide Conference Room (2150 Centre Ave., Bldg. E, Fort Collins, CO) and on October 10, 2012, from 2 to 7 p.m. at the Livermore Community Hall (1956 Red Feather Lakes Road, Livermore, CO). Both meetings utilized an open house format with exhibits and opportunities for interaction with Forest Service Representatives.

Seventy-nine comment letters were received during scoping for the 2006 proposal to construct a communication site at Middle Bald Mountain. The Forest Service received 54 comment forms, letters, and emails during the 45-day public scoping period for the EIS in the fall of 2012. Although the County's proposal was modified somewhat between 2006 and 2012, similar issues were raised during the two scoping periods. Public comments received during the two scoping periods are summarized in the scoping summary report available on the project website: http://www.fs.usda.gov/goto/arp/middlebald.

Issue Identification

Issues are defined as concerns about the potential effects of the proposed project. Both public and internal scoping comments (generated by the Forest Service interdisciplinary review team) were considered during issue identification. Each potential issue was evaluated to determine its relevance to the proposed project. Issues determined to be within the scope of the EIS, and warranting detailed analysis are summarized below. Key Issues determined through scoping to warrant detailed analysis in the EIS include:

- Impacts to the aesthetics and visual aspects of the area (including scenic integrity at the alternative sites and in the viewshed, sense of place, solitude, wildness, etc.) from the location of communication site facilities and the installation of an overhead power line along established and proposed roads from the Red Feather Lakes area to the alternative communication sites.

- Impacts to motorized and non-motorized recreational experiences and in the surrounding area (including to four-wheel and ATV driving, hiking, horseback riding, etc.) from the two alternative communication sites, and the proposed power line alongside roads leading to the site and across the meadow at the summit.
- Impacts to wetlands, fens, seeps, and to subalpine and alpine soils and vegetation from construction and maintenance of the access road and communication facility, including increased foot and motorized traffic, social trails, spread of noxious weeds, etc.
- Impacts to avian species protected by the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) from collisions with and/or electrocution by the proposed overhead power line and/or the proposed tower.
- Impacts to affected Federal or State Threatened or Endangered species (TES), Forest Service sensitive species (FSS), and management indicator species (MIS) from construction, operations, and maintenance of the proposed communication site and power line.
- Impacts to the integrity of cultural resources, including those eligible for listing on the National Register of Historic Places, from construction, operation, and maintenance of the proposed communication site.
- Impacts to soil and water quality including erosion, runoff, and stream sedimentation from construction and maintenance of the proposed power line and access road.

Decision to Prepare an EIS

As a result of issues raised during prior internal and public scoping, the Forest Service determined that an EIS would be the appropriate level of NEPA analysis for the County's final proposal. The EIS process was initiated with publication of a Notice of Intent in the *Federal Register* on September 14, 2012 (**Appendix A**).

DECISIONS FRAMEWORK

The Forest Service is the lead Federal agency and prepared the EIS. The results of the analysis presented in this EIS will form the basis for decisions regarding the project. Following the Draft EIS review and comment period, the Forest Service will consider written comments submitted by the public, interested organizations, and government agencies, and will respond to all comments in the Final EIS. The Forest Service may combine elements of alternatives considered in the EIS in the Record of Decision. If the Forest Service decision is to authorize Larimer County to construct and operate a communication facility, the Forest Service would amend its 1997 Forest Plan to identify designation of the 0.5 acres within the communication site boundary as MA 8.3 (Utility Corridors and Electronic Sites).

SUMMARY OF ALTERNATIVES ANALYZED IN DETAIL

Larimer County came to the Forest Service with a proposal for a communication site on Middle Bald Mountain to meet their need for improved safety and communication. Using its special use permitting review process the Forest Service accepted the County's proposal action to take into the NEPA analysis.

No Action Alternative

Under the No Action alternative, the Forest Service would not authorize Larimer County to construct and operate a communication site for government entity use in the vicinity of Middle Bald Mountain. Larimer County would continue to use the Deadman communication site, and the communication improvement objectives of the County and other government users would not be achieved. Inadequate VHF and no 800 MHz radio communication coverage would continue for emergency service providers and other public safety agencies in north central Larimer County and the Poudre Canyon.

Action Alternatives

A comprehensive review of potential alternatives was conducted by the Forest Service. The range of reasonable alternatives was developed with the help of public comments during the two scoping processes, which highlighted specific issues. Impacts to visual resources; motorized and non-motorized recreational experiences; subalpine and alpine soils and vegetation near the Middle Bald Mountain summit; wetlands; cultural resources; and wildlife were raised as key issues during internal and public scoping for the EA. Similar issues were identified during scoping for the EIS. In response to these issues, a broad range of alternatives was considered, using each of the project's key components. These components are listed below:

- Site Location. Alternate sites in the near vicinity of Middle Bald Mountain as well as an alternative with multiple sites in the Poudre Canyon were considered.
- Tower Location and Design. This included consideration of another tower location on the summit of Middle Bald Mountain and construction of the tower on top of the building, to combine the footprint of the tower and the building and reduce the overall footprint of the project.
- Building Location and Design. This included consideration of other building locations in and around the summit of Middle Bald Mountain and various design treatments of the building.
- Site Access. Several access road alignments between NFSR 517. NFSR 300, and the proposed communication facility at Middle Bald Mountain were considered as well as alternative means of access, such as construction by helicopter and foot-only access for operation and maintenance.
- Power Source. In addition to reliance on commercial power sources, the use of renewable energy at the Middle Bald Mountain site was evaluated.
- Power Line Route. Alternate routes and system designs were considered.
- Alternate Communication Systems. The possibility of utilizing a satellite-based system was evaluated.
- Site Designations. The possibility of designating the site for other types of uses, including use by non-governmental and commercial users, was considered.

Figure S-2 shows the location and general layout of the two action alternatives evaluated in detail.

Proposed Action: Government-Only Communication Site at Middle Bald Mountain Summit

Under the Proposed Action the Forest Service would issue an authorization to Larimer County for the construction and operation of a radio communications facility at the summit of Middle Bald Mountain for government use only (Federal, state, county, municipal). The proposed Middle Bald Mountain communication site would be located at an elevation of approximately 10,980 feet. The tower and building would hold equipment for use by Larimer County, the State of Colorado, the Fort Collins Water Department, volunteer fire departments, search and rescue organizations, and the Forest Service. Larimer County would be the lease holder and site manager. Larimer County, the State of Colorado, and the City of Fort Collins would remove their equipment from the Deadman site if the Middle Bald Mountain site were authorized. The Forest Service would co-locate at the Middle Bald site, as well. The Proposed Action would meet the purpose of and need for action by improving VHF and adding 800 MHz coverage and reliability in north central Larimer County and the Poudre Canyon for fire and medical first-responders, law enforcement, and other local, State, and Federal emergency and public services users (Pericle 2009). **Figure 2-2** shows the overall site plan at Middle Bald Mountain.

A connected action tied to an authorization of this communication site is Forest Service authorization to Poudre Valley Rural Electric Association (PVREA)for the construction, operation, and maintenance of an overhead distribution power line to serve the communication site. The ROW width for the power line

would be 20 feet (10 feet on each side of the center line). The new power line would connect from PVREA's existing infrastructure near Red Feather Lake, west alongside the Deadman Road (County Road 162) to its junction with the Killpecker Road, then south alongside the Killpecker Road (NFSR 300) to its junction with NFSR 517. The power line would go east along NFSR 517 to the point at which the proposed access road will leave NFSR 517. The overhead power line would continue alongside the access road to the point at the access road stops at the eastern edge of the trees bordering the meadow at the Middle Bald Mountain summit. The power line would then be buried by trenching it in across that meadow to the communication site building near the summit.

The proposed Middle Bald Mountain communication site is located in MA 5.11 (Emphasis on General Forest and Intermingled Rangeland). If the Decision is to authorize a designated communication site, the Forest Plan would be amended to designate the approximately 0.5 acres within the designated communication site boundary encompassing the proposed facilities as MA 8.3 (Utility Corridors and Electronic Sites).

Environmentally Preferred and Forest Service Preferred Alternative: Government-Only

Public comments on this project expressed concerns about the extent of impacts to both physical resources and the importance of intangible qualities such as the sense of place, wildness, isolation, etc. Sensitive to those comments, throughout the alternatives development process the Forest Service and Larimer County maintained an active search to identify alternative site locations that would meet the project purpose and need and have fewer resource impacts than the Middle Bald Mountain site. After considerable searching, one such location, referenced herein as the Killpecker site, was identified. The Killpecker site is located at a similar elevation approximately 0.5 mile to the northwest of the Middle Bald Mountain site. An on-the-ground evaluation conducted by Pericle Communications Company (Pericle 2013) demonstrated that development of the site would result in radio communication improvements at least as good as the Middle Bald Mountain site. This, combined with preliminary resource evaluations indicating that the Killpecker site would have minimal or no impacts on cultural, recreation, visual, vegetative, and soils/watershed/hydrologic resource impacts compared to the Middle Bald Mountain site. This resulted in a decision to carry the Killpecker site forward as the Forest Service Preferred Alternative in the EIS. The locations of the proposed Middle Bald Mountain site and the alternative Killpecker site are shown on **Figure S-1**.

Facilities at this site would be the same as described for the Proposed Action. The Killpecker communication site would meet the purpose of and need for action by improving VHF and adding 800 MHz coverage and reliability in north central Larimer County and the Poudre Canyon for fire and medical first-responders, law enforcement, and other local, State, and Federal emergency and public services users (Pericle 2013). The Environmentally Preferred Alternative to authorize a communication facility at the Killpecker site, is the Forest Service's preferred alternative.

A connected action tied to an authorization of this communication site is Forest Service authorization to PVREA for the construction, operation, and maintenance of an overhead distribution power line to serve the communication site, as was described for the Proposed Action.

Under this alternative action the Forest Service would issue an authorization to Larimer County for the construction and operation of a government-only communication site at the Killpecker site. The Killpecker communication site is located in MA 5.11(Emphasis on General Forest and Intermingled Rangeland). If the Decision is to authorize a designated communication site, the Forest Plan would be amended to designate approximately 0.5 acres within the designated communication site boundary as MA 8.3 (Utility Corridors and Electronic Sites).

A comparison of project components proposed for the Middle Bald Mountain and Killpecker communication sites is provided in **Table S-1**.

Table S-1 Comparison of Project Components

Project Component	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site
Site designation	Government Only	Government Only
Area to be designated as MA 8.3	0.5 acre	0.5 acre
Tower height	70 feet	70 feet
Building size (approx.)	192 square feet	192 square feet
Building design	Fiberglass or steel/composite transportable shelter; camouflaged to blend with the surroundings	Fiberglass or steel/composite transportable shelter, camouflaged to blend with the surroundings
Distance between tower and building	190 feet	20 feet
Power source	Commercial electric power with back-up generator	Commercial electric power with back-up generator
Power line length	12.8 miles	11.6 miles
Power line construction	Overhead from CR 162 to the end of the access road; then underground to the communication site	Overhead from CR 162 to the communication site with no underground segment.
Site access	1,558-foot new access road extending from NFSR 517 to the edge of the trees west of the summit; overland from end of access road to the communication site	1,755-foot new access road extending from NFSR 300 to the communication site
Vehicle restrictions	Access between the end of the access road and the equipment building would be by foot, turf-tired UTV, or snowmobile	None

Temporary and Long-term Disturbance Area Calculations

Temporary and long-term disturbance areas for construction and operation of a communication site at the Middle Bald Mountain Site or Killpecker Site are summarized in **Table S-2**.

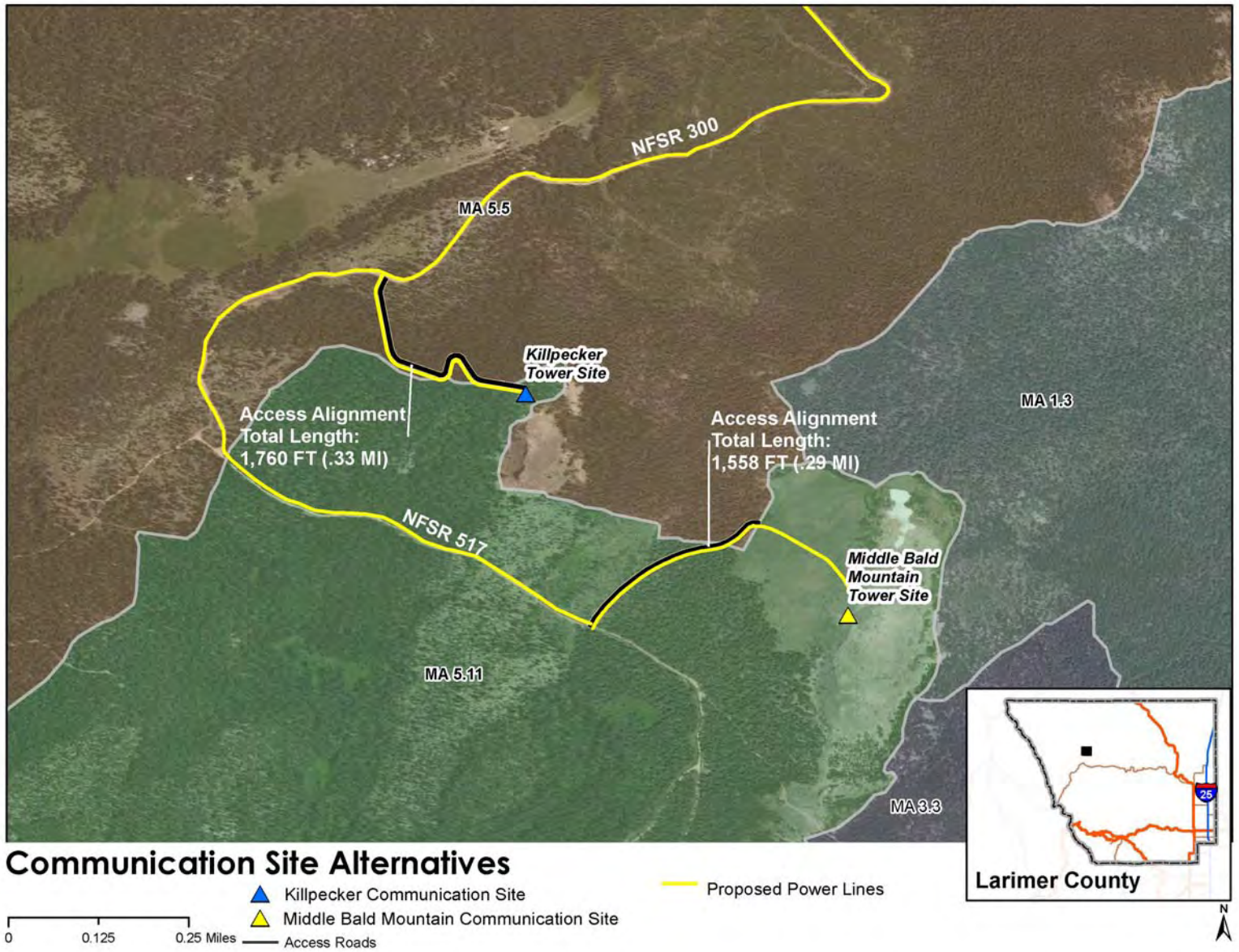
Table S-3 provides additional information comparing the two action alternatives, focusing on the key measurement indicators identified through project scoping. As shown in the table, the preferred alternative has consistently lower impacts than the proposed action, including impacts to visual resources, recreation, sensitive vegetation and soils, and cultural resources. Therefore, the Killpecker Site is the environmentally preferred and Forest Service preferred alternative.

Table S-2 Comparison of Temporary and Permanent Disturbance Areas

Project Component	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site
Temporary Disturbance (acres)		
Communication site	0.5	0.3
Staging area and turnouts	0.1	0.1
Access road	2.1	2.4
ROW clearing and overhead power line installation	31.0	28.1
Underground power line construction*	1.1	-
Total	**34.8**	**30.9**
Long-term Disturbance (acres)		
Communication site	<0.1	<0.1
Access road	0.4	0.4
Trench for underground power line*	<0.1	-
ROW maintenance	31.0	28.1
Total	**31.5**	**28.5**

*Middle Bald Mountain Site only

Figure S-2 Alternatives (Figure 2.1 in DEIS)



COMPARISON OF ALTERNATIVES

Table S-3 Measurement Indicators Effects for Issues by Alternative

Measurement Indicators for Issues	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site	No Action
Issue: Visual Resources and Aesthetics			
Existing SIO	Low	High	—
Resulting SIO	Very low	Low	—
Visibility from KOPs			
KOP 1	Minor adverse	Negligible to Minor adverse	None
KOP 2	Minor adverse	Minor adverse	None
KOP 3	Significant adverse	None	None
KOP 4	Significant adverse	Minor to Moderate adverse	None
Issue: Recreational Experience			
Consistent with ROS class	Yes	Yes	Yes
NFSR "open to all vehicles" impacted by power line construction (miles)	7.8	6.8	0.0
Change in recreational experience (intensity)			
Middle Bald Mountain Summit	Moderate Adverse	Minor adverse	None
Killpecker Trail	Moderate adverse	Negligible adverse	None
North Lone Pine Trail	Moderate adverse	Negligible adverse	None
Issue: Vegetation and Wetlands			
Acres of vegetation disturbed	33.6	30.8	0
Acres of old-growth trees potentially impacted	5	2.5	0
Potential loss of rare plants identified in the Analysis area	0	0	0
Acres of grass-herb community on Middle Bald Mountain	.5	0	0
Wetlands	0 with adherence to design criteria	0	0
Issue: T&E Wildlife, FSS, and MIS			
Threatened and Endangered Species			
Canada Lynx	[1]NLAA	NLAA	None

Measurement Indicators for Issues	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site	No Action
North American Wolverine	None	None	None
Forest Service Sensitive Species			
Gray Wolf	None	None	None
American Martin	[2]MI	MI	None
Pygmy Shrew	MI	MI	None
Fringed Myotis	MI	MI	None
Townsend's Big-Eared Bat	None	None	None
Hoary Bat	MI	MI	None
Northern Goshawk	MI	MI	None
Flammulated Owl	MI	MI	None
Boreal Owl	MI	MI	None
Lewis' Woodpecker	None	None	None
Olive-Sided Flycatcher	MI	MI	None
White-Tailed Ptarmigan	None	None	None
Boreal Toad	None	None	None
Northern Leopard Frog	MI	MI	None
Issue: Cultural Resources			
Number of sites adversely effected that are listed or eligible for listing on the NRHP	None direct with adherence to design criteria	None	None
Number of sites adversely effected that "needs data" to determine NRHP eligibility	1	0	0
Issue: Erosion, Runoff, and Stream Sedimentation			
Acres of soils disturbed*	31.1	28.2	0
Acres of sensitive soils disturbed	15.5 with design criteria & BMPs	15.5	0
Acres of sensitive meadow	1.3	0	0
Potential for Runoff & Stream sedimentation	Low with design criteria & BMPs	Low	None

[1]NLAA = May affect, but not likely to adversely affect.

[2]MI = May impact but not likely contribute towards federal listing or loss of viability to the species.

*Sensitive soils include water erodible, compaction prone, and limited reclamation potential 999

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Draft Environmental Impact Statement
Larimer County, CO

Chapter 1.0 Introduction

1.0 Introduction

The Arapaho and Roosevelt National Forests and Pawnee National Grassland (ARP) is preparing an Environmental Impact Statement (EIS) for the Middle Bald Mountain Area Communication Site in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC §4321 et seq.), the Council on Environmental Quality regulations implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and the United States (U.S.) Forest Service (Forest Service) NEPA implementing regulations (36 CFR Part 220).

1.1 Project Background

Larimer County, in north central Colorado, encompasses both the rugged terrain of the Rocky Mountains to the west and the Great Plains to the east. Situated on the eastern side of the Continental Divide, Larimer County is a gateway to the Roosevelt National Forest and Rocky Mountain National Park and has offered generations of recreationists and residents nearly infinite opportunities to enjoy the outdoors in all seasons. Accommodations range from backcountry camping opportunities on the National Forest to abundant hotels, motels, and restaurants in nearby Fort Collins. Several rugged and scenic canyons provide access to the mountainous back country, including the well-known Cache la Poudre Canyon.

The Cache la Poudre River has drawn legions of recreationists for decades, and the numbers continue to increase. The river is home to large populations of wild trout. Fly fishing is very popular. The river also draws kayaking, inner tubing, and white water rafting enthusiasts from around the world. One segment of the river is Colorado's only nationally-designated Wild and Scenic River. State Highway 14 through the Canyon is a Colorado Scenic Byway and transects National and State forests on the way to summer and winter recreation opportunities and the Arapaho National Wildlife Refuge on the west side of 10,276-foot high Cameron Pass. Miles and miles of National Forest hiking, biking, and equestrian trails and popular sighting-seeing roads weave through the mountainous area.

The Canyon has experienced constantly increasing numbers of recreationist and sight-seer incidents requiring emergency response both in the Canyon and on the river, and ever-increasing numbers of private homes being built in Red Feather Lakes, Crystal Lakes subdivision, Glacier View Meadows subdivision, within the Canyon and in the rugged foothills to the north. As a result of this increasing traffic and use, emergency responders such as law enforcement, wildland and volunteer firefighters, and search and rescue organizations find the existing Deadman Communication Site does not provide adequate emergency and public service radio communication coverage and/or signal strength in north-central Colorado, particularly in the Poudre Canyon. Larimer County and the Forest Service currently have VHF (very high frequency) public service and emergency radio communications equipment at the Deadman Communications Site, located on the Roosevelt National Forest north and west of the Red Feather Lakes area in Section 13, Township 10 North, Range 75 West in Larimer County. Co-located with the County's equipment are State of Colorado and City of Fort Collins radio communication facilities. Area volunteer fire departments and search and rescue organizations do not have radio equipment at the Deadman site, but they utilize the County's radio equipment and frequencies when responding to emergencies in north-central and north-western Colorado. AT&T Cellular has commercial cellular communications equipment located at the Deadman site, as well. There is no commercial power at the Deadman site; all radio and cellular communication facilities there are currently powered by very small solar arrays.

Adding to this situation, the State and County have made the decision to convert to the nationwide 800 MHz emergency radio communication system. A functional statewide 800 MHz network requires an 800 MHz radio communication facility somewhere in the north-central Colorado area. While the Deadman Communication Site could fill that gap, an 800 MHz system is active at all times, unlike VHF which is only activated when a microphone is keyed. The lack of commercial electrical power at the Deadman site would be problematic, as large solar and/or wind and/or generator power facilities would otherwise

be essential to power 800 MHz facilities there. However, even if commercial power were available, the Deadman site would not provide adequate coverage or signal strength for an 800 MHz system in north-central Colorado or in the Poudre Canyon (Pericle 2009).

To address these signal coverage and signal strength issues, Larimer County conducted a series of technical studies, beginning in March 2001. Pacific Consulting Services (2001) identified Poudre Canyon and Laramie River Valley as areas requiring additional public safety radio coverage. Larimer County submitted a proposal for the construction of a communication facility on South Bald Mountain to the Forest Service in March 2003 (Larimer County 2003a). The Forest Service denied this application after determining that the proposed site on South Bald Mountain was not consistent with applicable laws and policies because it was located within the Green Ridge-East Inventoried Roadless Area. Construction of roads and cutting trees, necessary in this case to construct and maintain the facilities, could not be authorized under the 2001 Roadless Rule and later under the 2012 Colorado Roadless Rule (Forest Service 2003).

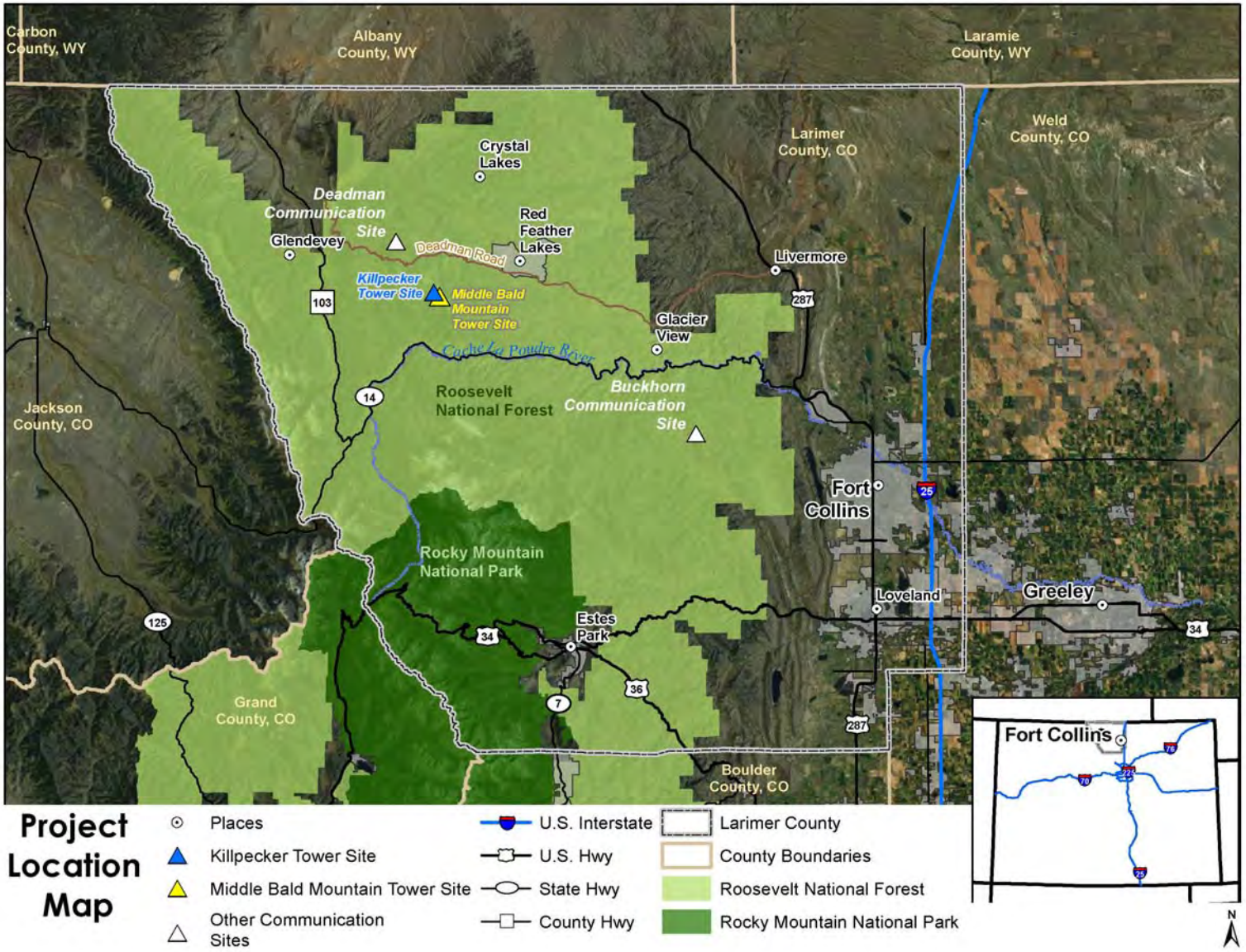
After the South Bald Mountain Communication Site proposal was screened and then denied by the Forest Service, Larimer County constructed a communication site on Bull Mountain, which, together with facilities on Pole Mountain in southern Wyoming, improved coverage in the Laramie River Valley. The County then conducted additional technical studies and evaluated multiple sites throughout Larimer County for improving radio communications in northern portions of the County and in Poudre Canyon (Larimer County 2003b, CTA Communications Inc. 2006, Larimer County 2006). These studies resulted in a proposal by Larimer County to construct a communication facility on Middle Bald Mountain, which was submitted to the Forest Service in April 2006. This proposal passed the special uses screening criteria, and the Forest accepted the County's proposal as an application. The Forest Service initiated an Environmental Assessment (EA) for the Middle Bald Mountain site in September 2006, and solicited public input on the proposal during the EA scoping period, which began December 1, 2006 and ended January 22, 2007. In 2008, Larimer County asked that the Forest Service suspend processing of their application for budgetary reasons. Between 2009 and 2011, Larimer County conducted additional technical studies to further refine their proposed plans for the site. A revised proposal for the Middle Bald Mountain communication site was submitted to the Forest Service in April 2011 (Larimer County 2011); the revised proposal passed the special uses screening criteria, and the revised proposal was accepted as an application in November 2011.

As a result of issues raised during prior internal and public scoping, the Forest Service determined that an EIS would be the appropriate level of NEPA analysis for the County's final proposal. The EIS process was initiated with publication of a Notice of Intent in the *Federal Register* on September 14, 2012 (**Appendix A**). **Figure 1-1** shows the project location. See Section 1.6 for a summary of the scoping process and Section 1.7 for a description of issues raised during scoping.

1.2 Purpose and Need

The purpose of and need for this action is to provide expanded and more-reliable, all-weather emergency communications capabilities in north central Larimer County, including additional reaches of the Poudre Canyon. VHF radio coverage is presently poor or nonexistent in the mountainous northwest part of the County, including the Poudre Canyon (Colorado Highway 14), Red Feather Lakes, Crystal Lakes subdivision, Glacier View Meadows subdivision, and areas in the Roosevelt National Forest (Pericle 2009). The need for this action is to improve public safety communication capability, add capacity for an 800 MHz frequency, and reliability so fire and medical first-responders, law enforcement, other government public safety and public service agencies (i.e., volunteer fire departments, Larimer County Search and Rescue, the Forest Service, and other government entities) can provide quicker and better assistance to area residents and recreational visitors during both emergency and routine incidents in those areas.

Figure 1-1 Project Location Map



1.3 Proposed Action and Alternatives

Larimer County came to the Forest Service with a proposal for a communication site on Middle Bald Mountain to meet their need for improved safety and communication. Using its special use permitting review process the Forest Service accepted the County's proposal action to take into the NEPA analysis. Under the proposed action the Forest Service would issue an authorization to Larimer County to construct and operate a government-only radio communications facility on Middle Bald Mountain for both VHF and 800 MHz communications. The proposed action would include:

- an approximately 70-foot high, 3-legged steel lattice tower near the summit of Middle Bald Mountain;
- an approximately 200 square-foot equipment building in the meadow near the tower, including a 20 kilowatt diesel generator separate from the building as backup if electric power is interrupted;
- an approximately 10-foot wide access road during construction from NFSR 517 to the edge of the trees on the west border of the open meadow;
- approximately 12 miles of power line (route described below).

A connected action tied to an authorization of this communication site is that the Forest Service would issue an authorization to Poudre Valley Rural Electric Association (PVREA) for the construction, operation, and maintenance of an overhead distribution power line to serve the communication site. The power line would be installed overhead from the Red Feather Lakes area to the west along County Road 162, to the south along NFSR 300, to the east for a short distance along NFSR 517, and alongside the access road to the edge of the trees on the west border of the open meadow of the summit. From that point, the power line would be trenched in across the meadow to the communication facilities. Poudre Valley REA is currently authorized by the Forest Service to operate and maintain all their power lines on National Forest System lands on the Canyon Lakes Ranger District under a master special use permit. If the proposed action were approved, PVREA would submit an application and construction design plans for the new power line. After review of the plans the Forest Service would issues a temporary permit and construction plan with any required design criteria. After the power line is built, PVREA would submit as-built plats and the line would be amended to their master special use permit.

The Proposed Action would meet the purpose and need by improving VHF and 800 MHz coverage and reliability in north central Larimer County and the Poudre Canyon for fire and medical first-responders, law enforcement, and other local, State, and Federal emergency and public services users of the VHF and 800 MHz radio systems (Pericle 2009). A more detailed description of the Proposed Action is provided in Section 2.2.2.

Public comments on this project expressed concerns about the extent of impacts to both physical resources and the importance of intangible qualities such as the sense of place, wildness, isolation, etc. Sensitive to those comments, throughout the alternatives development process the Forest Service and Larimer County maintained an active search to identify alternative site locations that would meet the project purpose and need and have fewer resource impacts than the Middle Bald Mountain site. After considerable searching, one such location, referenced herein as the Killpecker site, was identified. The Killpecker site is located at a similar elevation approximately 0.5 mile to the northwest of the Middle Bald Mountain site. An on-the-ground evaluation conducted by Pericle Communications Company (Pericle 2013) demonstrated that development of the site would result in radio communication improvements at least as good as the Middle Bald Mountain site. This, combined with preliminary resource evaluations indicating that the Killpecker site would have minimal or no impacts on cultural, recreation, visual, vegetative, and soils/watershed/hydrologic resource impacts compared to the Middle Bald Mountain site. This resulted in a decision to carry the Killpecker site forward as the Forest Service Preferred Alternative in the EIS. The Killpecker Site is the Forest Service's Preferred Alternative due to its reduced effects on

several key resources. This alternative meets the purpose and need includes the same basic project components as the Middle Bald Mountain alternative. It is described in Section 2.2.3.

A No Action Alternative was also analyzed.

1.4 Public Involvement

Public involvement activities undertaken during the EIS scoping period include publication of the Notice of Intent; public outreach through a project website; hard copy or email distribution of a scoping letter to the project mailing list; distribution of a press release; and public open house scoping meetings. Each of these are described below. The complete scoping summary report is available for download from the project website located at: http://www.fs.usda.gov/goto/arp/middlebald.

1.4.1 Notice of Intent

A Notice of Intent to prepare an EIS was published in the *Federal Register* on September 14, 2012 (**Appendix A**). The Notice of Intent invited public participation in the EIS scoping process and solicited public comments on the scope of the EIS during a 45-day scoping period that commenced September 14, 2012, and ended October 29, 2012.

1.4.2 Project Website

The Forest Service and Larimer County maintain project websites at http://www.fs.usda.gov/goto/arp/middlebald and http://larimer.org/baldmountain/. Public announcements, project updates, project documents, background and contact information are posted to the project websites. The websites are updated as new information becomes available.

1.4.3 Scoping Letter

A scoping letter describing the proposed action, how to comment, and dates and locations for public meetings was distributed to the project mailing list by mail or email between September 14-15, 2012. The scoping letter included an informal site prospectus and call for interest from potential site users.

1.4.4 Press Release

A press release announcing the dates and locations of public scoping meetings was distributed to media outlets on September 24, 2012, and posted to the project website. The press release and public meeting reminders were also tweeted from the Canyon Lakes Ranger District's Twitter account.

1.4.5 Public Scoping Meetings

The Forest Service held public scoping meetings for the Middle Bald Mountain Area Communication Site on October 9, 2012, from 2 - 7 p.m. at the Forest Supervisor's Office, Continental Divide Conference Room (2150 Centre Ave., Bldg. E, Fort Collins, CO) and on October 10, 2012, from 2 - 7 p.m. at the Livermore Community Hall (1956 Red Feather Lakes Road, Livermore, CO). The dates, times, and locations of public scoping meetings were announced on the project website, through a press release, and through direct mailing or emailing of the scoping letter.

1.4.6 Scoping Comments

Seventy-nine comment letters were received during scoping for the 2006 proposal to construct a communication site at Middle Bald Mountain. The Forest Service received 54 comment forms, letters, and emails during the 45-day public scoping period for the EIS in the fall of 2012. Although the County's proposal was modified somewhat between 2006 and 2012, similar issues were raised during the two scoping periods. Public comments received during the two scoping periods are summarized in the

scoping summary report available for download from the project website: http://www.fs.usda.gov/goto/arp/middlebald.

1.5 Issue Identification

Both public and internal scoping comments (generated by the Forest Service interdisciplinary review team) were considered during issue identification. Issues determined to be within the scope of the EIS, and warranting detailed analysis are summarized in Section 1.7.1 below. Issues considered but not analyzed further are summarized in Section 1.7.2.

1.5.1 Issues Identified for Analysis

Issues determined through scoping to warrant detailed analysis in the EIS include:

- Impacts to the aesthetics and visual aspects of the area (including scenic integrity at the alternative sites and in the viewshed, sense of place, solitude, wildness, etc.) from the location of communication site facilities and the installation of an overhead power line along established and proposed roads from the Red Feather Lakes area to the alternative communication sites.
- Impacts to motorized and non-motorized recreational experiences in the surrounding area (including to motorcycling, four-wheel and ATV driving, hiking, horseback riding mountain biking, etc.) from the two alternative communication sites, and from the proposed power line alongside roads leading to the sites and across the meadow at the summit of the Middle Bald Mountain site.
- Impacts to wetlands, fens, seeps, and to subalpine and alpine soils and vegetation from construction and maintenance of the access road and communication facility on Middle Bald Mountain, including increased foot and motorized traffic, social trails, spread of noxious weeds, etc.
- Impacts to avian species protected by the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) from collisions with and/or electrocution by the proposed overhead power line and/or the proposed tower.
- Impacts to affected Federal or State Threatened or Endangered species (TES), Forest Service sensitive species (FSS), and management indicator species (MIS) from construction, operations, and maintenance of the proposed communication site and power line.
- Impacts to the integrity of cultural resources, including those eligible for listing on the National Register of Historic Places, from construction, operation, and maintenance of the proposed communication site.
- Impacts to soil and water quality including erosion, runoff, and stream sedimentation from construction and maintenance of the proposed power line and access road.

1.5.2 Issues Dismissed from Detailed Analysis

Issues dismissed from detailed analysis, and the rationale for their dismissal, are summarized below:

- Concerns regarding whether Larimer County has adequate funds to pay for the project, or whether Larimer County has set budget/spending priorities that are in the best interest of taxpayers. This issue was determined to be outside the scope of the EIS.
- Concerns regarding whether the actions of government employees or elected officials are politically motivated. This issue was determined to be outside the scope of the EIS.
- Concerns regarding the adequacy of public involvement processes related to Commissioners' work sessions. This issue was determined to be outside the scope of the EIS.

- Comments that the entire Bald Mountain range should be designated as wilderness. This issue was determined to be outside the scope of the EIS.
- Inquiry as to whether a restoration plan would be developed and funding set aside for decommissioning of the site in the future. Decommissioning of the communication site is not part of the proposal, and the effects of decommissioning are outside the scope of the EIS. Larimer County's use of the site would be authorized under a Communication Site lease. In the event the Authorized Officer decides not to issue a new lease, or the Lessee does not desire a new lease, the Authorized Officer and the Lessee shall, within six months prior to the termination date of this lease, agree upon a mitigation plan to restore and stabilize the site.
- Effects to area property values, tourism and outdoor recreation, and local businesses, from the proposed project. The nearest private residential development is located approximately four miles from the proposed communication site. No effects to property values are anticipated at this distance. Construction employment created by the project would be short-term (approximately three months' duration) and would not significantly affect employment revenue in the County. Recreational uses could be displaced from Middle Bald Mountain to other recreational areas on the Forest if the proposal is implemented; effects to recreational experience are analyzed in the EIS. However, displacement of recreational uses to other recreational areas on the Forest is not anticipated to have a measurable effect on the local or regional economy. Therefore, socioeconomics was dismissed from further analysis.
- Noise and air quality impacts from the proposed project. Noise and air impacts from construction of the communication site would be short-term (approximately three months' duration). Construction best management practices would be implemented during construction and neither emissions of fugitive dust nor construction noise levels are anticipated to exceed regulatory thresholds. Operational noise and air quality impacts would occur only when the backup diesel generator is operating due to loss of the electrical supply; those impacts will be intermittent and short-term. Therefore, noise and air quality were dismissed from detailed analysis.
- Comments for or against the proposed project with no rationale provided. The NEPA public involvement process is meant to elicit anticipated impacts to the human environment so those impacts can be analyzed and disclosed. Comments for or against an action which include no human environment-based rationale are duly noted but have no means for inclusion in the analysis.

1.5.3 Permits and Approvals

Permits and approvals that may be required for project implementation are summarized in **Error! Reference source not found.**.

Table 1-1 Permits and Approvals

Permit or Approval	Description	Statute or Regulation	Administrative Authority
Special-Use Authorizations	A special-use authorization is a legal document such as a permit, term permit, lease, or easement, which allows occupancy, use, rights or privileges on NFS lands. The authorization is granted for specific uses of land for specific periods of time (such as for a communication site or a power line).	36 CFR Part 251	Forest Service

Permit or Approval	Description	Statute or Regulation	Administrative Authority
ESA Section 7 Consultation	Required for all federal actions to ensure minimization of adverse impacts to federal listed species.	ESA (16 U.S.C. §§ 1531 et seq.)	USFWS
NHPA Section 106 Consultation	Federal agencies are required to consult with the SHPO to seek ways to avoid, minimize, or mitigate adverse effects of a federal action on historic properties.	NHPA (16 U.S.C. §§ 470 et seq.); 36 CFR Part 800	Colorado Office of Archaeology and Historic Preservation
Location and Extent	The purpose of this review is to determine if a public use, structure or utility proposed for location in unincorporated Larimer County conforms with the adopted master plan.	Section 13 of the Larimer County Land Use Code	Larimer County

CDPHE = Colorado Dept of Public Health and Environment, CFR = Code of Federal Regulations, CWA = Clean Water Act, ESA = Endangered Species Act, NHPA = National Historic Preservation Act, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Officer, USACE = U.S. Army Corps of Engineers, U.S.C. = United States Code, USFWS = U.S. Fish and Wildlife Service, WQC = Water quality certification.

1.6 Regulatory and Administrative Framework

1.6.1 1997 Revision of the Land and Resource Management Plan

The National Forest Management Act of 1976 (16 U.S.C.§ 1600 et seq.) directs the Forest Service to prepare land management plans for units of the National Forest System (NFS). The 1997 Revision of the Land and Resource Management Plan for the Arapaho and Roosevelt National Forests and Pawnee National Grassland (the Forest Plan) establishes programmatic direction for the management of these NFS lands, and includes forest-wide standards and guidelines, management area categories and direction, and geographic area direction. The Forest Plan direction, standards and guidelines, etc., that are pertinent to the proposed action are provided below.

1.6.1.1 Forest-wide Standards and Guidelines

While all standards and guidelines will be followed, the following Forest-wide Special Use standards (ST) and guidelines (GL) from the Forest Plan are specifically applicable to the proposed project:

154. (ST) Prohibit management activities that are inconsistent with the scenic integrity objective unless a decision is made to change the scenic integrity objective. A decision to change the scenic integrity objective will be documented in a project-level NEPA decision document.

168. (ST) Require burial of electrical utility lines of 33 kilovolts or less and telephone lines unless one or more of the following applies:

a. Scenic integrity objective of the area can be met using an overhead line.

b. Burial is not feasible due to geological hazard or unfavorable geologic conditions.

c. Greater long-term site disturbance would result.

d. It is not technically feasible (Forest Service 1997, page 40).

174. (GL) Consolidate occupancy of transportation and/or utility corridors and sites wherever possible and compatible (Forest Service 1997, page 40).

1.6.1.2 Geographic Area Direction

The proposed project is located in the Deadman Geographic Area (Forest Service 1997; page 211). Pertinent Goals and Desired Conditions for this area include:

- Maintain summer range for big-game animals.
- Maintain fish habitat and cooperate with other agencies to determine presence, status, and genetic purity of greenback cutthroat trout in area streams. Manage activities to protect greenback cutthroat trout habitat and populations and to enhance recovery.
- The wildland fire management strategy is perimeter control except along the eastern portion of the area adjacent to developments where it is direct control.
- Close the Black Mountain grazing allotment, currently vacant, because of lack of livestock access.
- Designate dispersed recreational sites to eliminate visual and environmental impacts. Improve existing trails and trailheads. Manage backcountry recreation to minimize human-wildlife conflicts.
- Implement seasonal road closures to protect wildlife habitat and resources during critical periods of the year.
- Designate and maintain winter travelways for both motorized and non-motorized uses.

1.6.1.3 Management Areas

The ARP is broken into discrete Management Areas (MAs). MAs provide management direction by emphasizing a particular resource and identifying direction (prescriptions) for management activities. The MAs in the project vicinity are shown on **Figure 1-2**. Project activities would occur in MAs 5.11 and 5.5. MA direction for MAs 5.11 and 5.5 in the Deadman Geographic Area is described in Section 1.4.1.4 below.

As noted above and on **Figure 1-2**, the analysis area is not currently located in MA 8.3 (Utility Corridors and Electronic Sites). If the Decision is to authorize a designated communication site, the Forest Plan map of the Deadman Geographic Area would be amended to include 0.5 acres of MA 8.3 encompassing the proposed facilities, and the following desired condition and guidelines would apply:

Management Area 8.3 (Utility Corridors and Electronic Sites) (Forest Service 1997; page 386)

Desired Condition

Vegetation composition and structure has been altered to meet the needs of the site. Larger trees are removed to allow for a safety area below and to the side of power lines. Smaller trees are still present. Other areas such as pipelines and electronic sites have been cleared of all trees. The boundaries of the cut areas bordering the utility corridor are blended into the surrounding vegetation.

Opportunities for viewing wildlife are good. Wildlife species that prefer edge habitats, such as deer, are the most common. Raptors are often seen within the corridor although they may not nest there. Habitat for sensitive species may be enhanced where opportunities exist, but the focus is on protection and maintenance of those habitats.

Human development is obvious and may dominate the foreground views. Uses within the corridor are compatible with adjacent management areas. Both motorized and non-motorized uses occur in the area.

An extensive road system exists throughout most of the area for purposes of allowing access for maintenance of the utility. Most roads have a native surface with water bars to reduce erosion. Road use may be restricted to use by utility maintenance vehicles.

All landownership adjustments must be compatible with the strategy of the management area objective through which the corridor passes.

1. (GL) Design and construction of power distribution lines will minimize electrocution hazards for raptors and provide nest sites where feasible.

2. (GL) Utility Corridors and electronic sites will be located and designed to blend with the landscape. They will be compatible with the scenic integrity objectives of adjacent management areas (Forest Service 1997, page 386).

Management Area Direction for the Deadman Geographic Area

MA direction for MAs 5.11 and 5.5 in the Deadman Geographic Area is described below.

Management Area 5.11 (Emphasize general forest and intermingled rangelands) (Forest Service 1997; page 213). The Middle Bald Mountain summit and area directly to the south and west are located in this area.

Manage vegetation to provide the needed mix of wildlife habitats, reduce fuel loadings, produce timber products, enhance scenic qualities, and rehabilitate landscape elements. Increase the amounts of aspen and grasslands through timber harvest and prescribed fire in the lodgepole pine type. Prescribed fire (including non-lethal understory, mixed variable and stand-replacement fires) may be implemented in the ponderosa pine type and lodgepole pine types in conjunction with vegetation manipulation. Encourage recruitment and retention of old growth. Create conditions that make insect and disease epidemics unlikely. Timber harvest is probable near South Bald.[1]

Designate dispersed recreational sites to eliminate visual and environmental impacts. Close or rehabilitate dispersed recreational sites that have deteriorated below acceptable standards.

Consider closure of roads and trails that cause resource damage or are in excess of NFS needs. Horseback riding, mountain biking, and hiking may be allowed on travelways closed to motorized use.

Use temporary access roads, as needed, to achieve fuels reduction, improve wildlife habitat, produce timber products, enhance scenic qualities, and rehabilitate landscape elements; close roads once the activity is completed (Forest Service 1997, page 213).

Management Area 5.5 (Emphasize forest products and dispersed recreation) (Forest Service 1997; pages 214-215). The area to north of the proposed communication site and most of the length of the power line would be located in this MA.

[1] The Colorado Roadless Rule (36 CFR Part 294) prohibits timber harvest in Inventoried Roadless Areas. Although the1997 Forest Plan anticipated timber harvest in the South Bald area, the Forest Plan is superseded by the 2012 Colorado Roadless Rule. The South Bald area is located within the Green Ridge-East Roadless Area and therefore, timber harvest will not be planned.

Manage vegetation to provide the needed mix of wildlife habitats, reduce fuel loadings, produce timber products, enhance scenic qualities, and rehabilitate landscape elements. Maintain the ponderosa pine and Douglas-fir components of the landscape. Increase the amounts of aspen and grasslands through timber harvest and prescribed fire in the lodgepole- pine type. Implement non-lethal understory or mixed variable prescribed fire in the ponderosa pine type and lodgepole pine types in conjunction with vegetation manipulation. Encourage recruitment and retention of old growth. Create conditions that make insect and disease epidemics unlikely. Timber harvest is probable in Nunn Creek Basin, Deadman Lookout, Killpecker areas and Deadman Road corridor.

Close or rehabilitate dispersed recreational sites that have deteriorated below acceptable standards. Use designated dispersed recreational sites to eliminate visual and environmental impacts.

Non-system roads already inventoried may be added to the existing transportation system for motorized opportunities; all other non-system roads should be closed. Allow horseback riding, mountain biking, and hiking on existing travelways which have been closed to motorized use.

Roads and trails causing resource damage may be closed.

Use temporary access roads, where necessary, to achieve fuels reduction, improve wildlife habitat, produce timber products, enhance scenic qualities, and rehabilitate landscape elements; close and obliterate roads once the activity is completed (Forest Service 1997, page 214).

1.6.2 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531-1544) requires federal agencies, in consultation with the United States Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "take" of ESA-listed species.

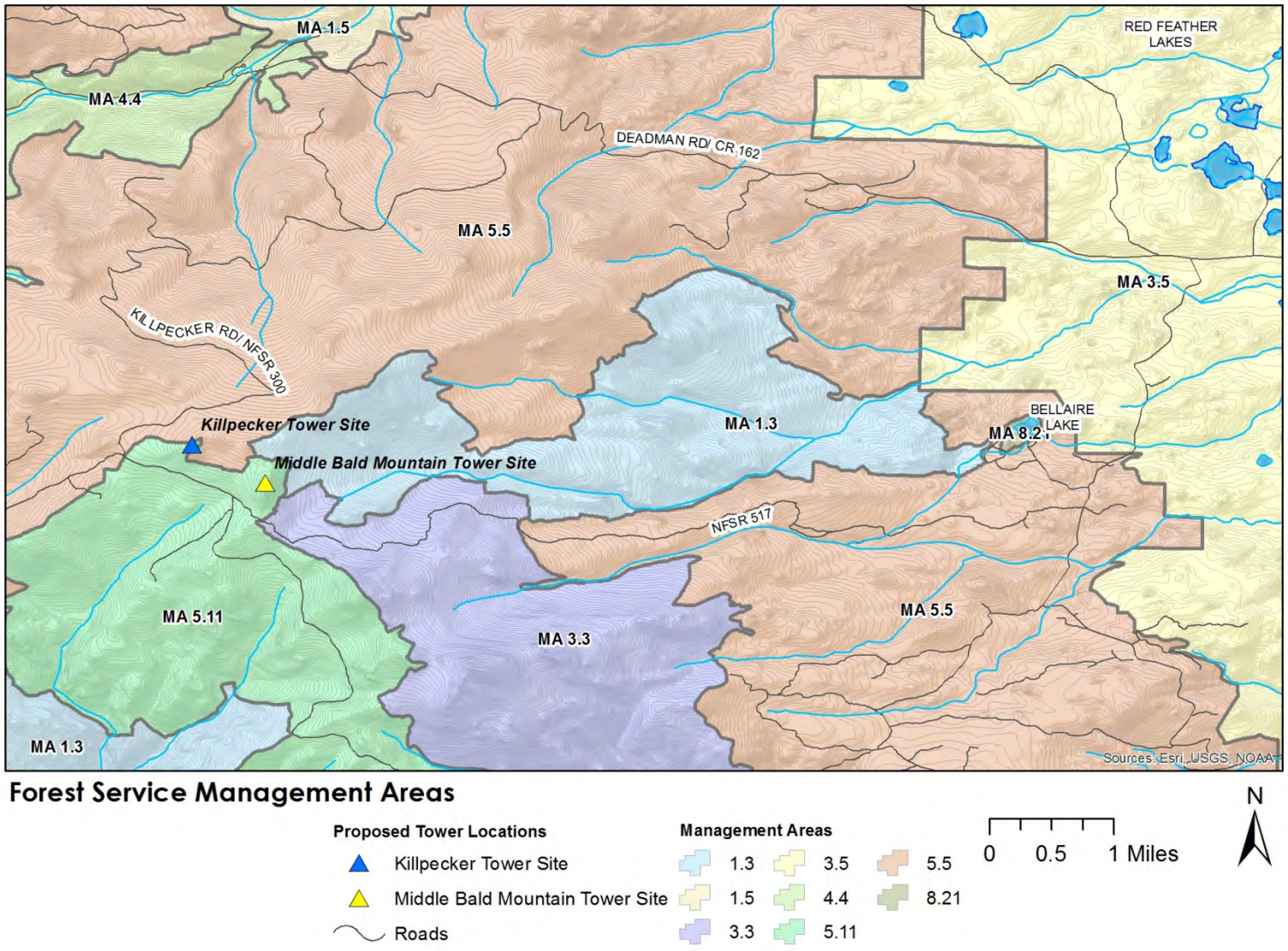
1.6.3 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. §§ 470 et seq.) establishes as federal policy the protection of historic properties in cooperation with state and local governments, Indian tribes, and other stakeholders. Section 106 of the NHPA directs federal agencies to take into account the effect of federally funded or licensed undertakings on any district, site, building, structure, or object either listed or eligible for listing on the National Register of Historic Places.

1.6.4 Other Laws, Regulations, and Policies

All other laws, regulations, and policies guiding Forest Service management of NFS lands will be followed.

Figure 1-2 Forest Service Management Areas



1.7 Decision Framework

1.7.1 Responsible Official

The Responsible Official for this decision is the Forest Supervisor.

1.7.2 Decision to be Made

The Responsible Official (Decision Maker) reviews the EIS proposed action and alternatives in order to make the following determinations:

- Compliance of the analyzed alternatives with the Forest Plan and all laws governing Forest Service actions;
- Sufficient site-specific environmental analysis has been completed;
- The proposed project benefits the public overall.

With those assurances, the Responsible Official must decide:

- Whether or not to authorize the proposed action or an alternative action, combine elements of the EIS alternatives, or take no action (i.e., select the no action alternative);
- The designated use of the site;
- What mitigation measures and monitoring requirements the Forest Service should apply to the action it decides to take.

1.7.3 Framework for Decision-making

The Forest Service is the lead Federal agency and prepared the EIS. The results of the analysis presented in this EIS will form the basis for decisions regarding the project.

Following the Draft EIS review and comment period, the Forest Service will consider written comments submitted by the public, interested organizations, and government agencies, and will respond to all comments in the Final EIS. The Forest Service may combine elements of alternatives considered in the EIS in the Record of Decision. If the Forest Service decision is to authorize Larimer County to construct and operate a communication facility, the Forest Service would amend its 1997 Forest Plan to identify designation of the 0.5 acres within the communication site boundary as MA 8.3 (Utility Corridors and Electronic Sites).

Instrumental to the Forest Service decision will be the consideration of measureable indicators that have been defined to measure the effects of the different alternatives with regard to key and other resource issues. The measurable indicators used to compare the alternatives are identified in each resource section of Chapter 3 and summarized in **Table 2-5**.

The Forest Service decision will be subject to a pre-decisional objection process rather than the former appeals process (Consolidated Appropriations Act of 2012). In order to have standing to object to the Forest Service decision, a person(s) or organization must have submitted specific written comments during the 45-day public comment period on this Draft EIS initiated by the Notice of Availability in the Federal Register. The 45-day Objection Period will begin on the date of publication of a legal notice in the Forest Service newspaper of record, the Fort Collins Coloradoan, that the Final EIS and Draft Record of Decision are available. The Forest Service will respond to all objections prior to issuing its final Record of Decision.

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Middle Bald Mountain Area Communication Site
Draft Environmental Impact Statement
Larimer County, CO

Chapter 2.0 Alternatives

2.0 Alternatives

This chapter provides a description of the alternatives considered, including No Action, the Proposed and Alternative Actions considered for detailed analysis, and other alternatives that were considered but dismissed from detailed analysis.

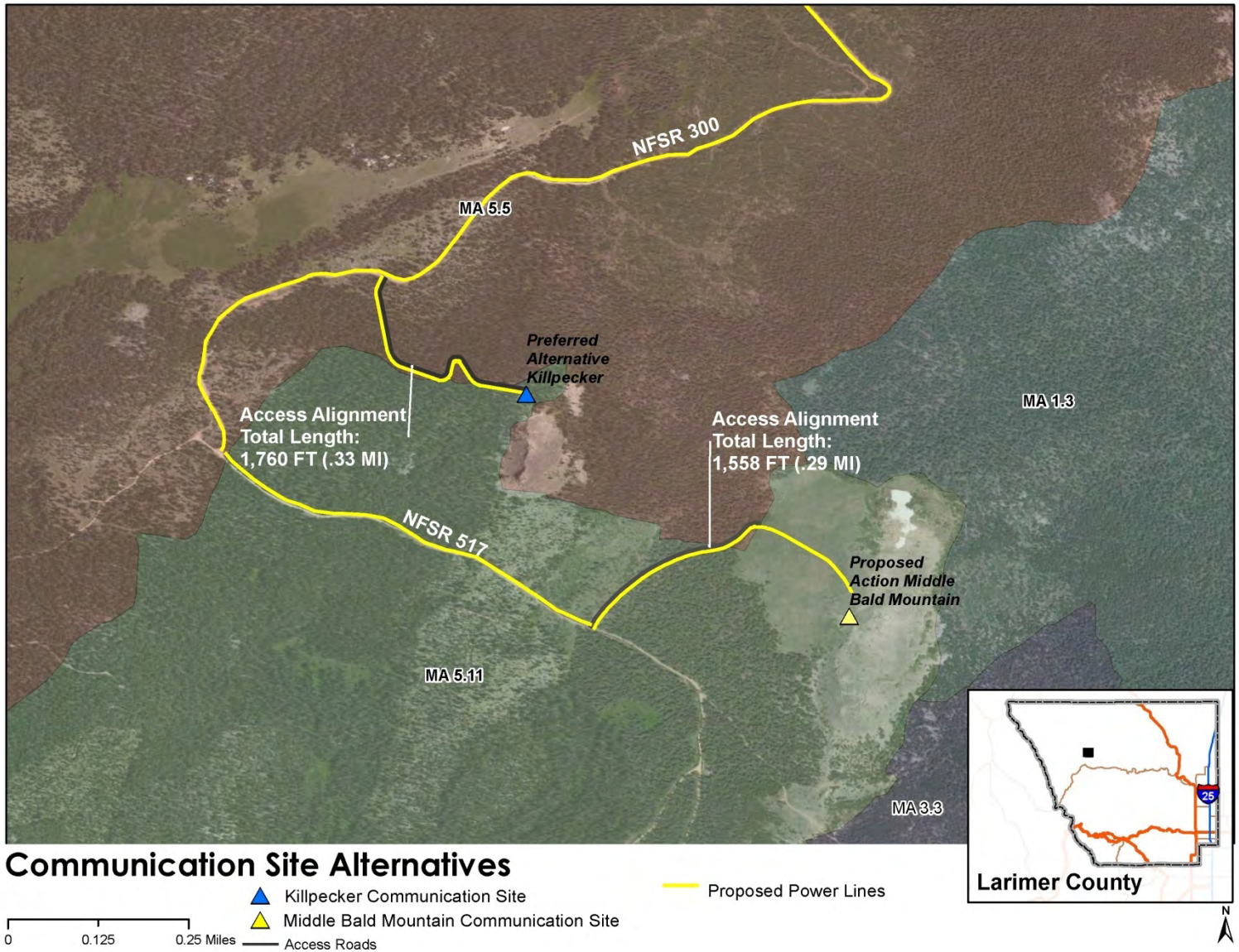
2.1 Alternatives Development

A comprehensive review of potential alternatives was conducted by the Forest Service. The range of reasonable alternatives was developed with the help of public comments during the two scoping processes, which highlighted specific issues. Impacts to visual resources; motorized and non-motorized recreational experiences; subalpine and alpine soils and vegetation near the Middle Bald Mountain summit; wetlands; cultural resources; and wildlife were raised as key issues during internal and public scoping for the EA. Similar issues were identified during scoping for the EIS. In response to these issues, a broad range of alternatives was considered, using each of the project's key components. These components are listed below:

- Site Location. Alternate sites in the near vicinity as well as an alternative with multiple sites in the Poudre Canyon were considered.
- Tower Location and Design. This included consideration of another tower location on the summit of Middle Bald Mountain and construction of the tower on top of the building, to combine the footprint of the tower and the building and reduce the overall footprint of the project.
- Building Location and Design. This included consideration of other building locations in and around the summit of Middle Bald Mountain and various design treatments of the building.
- Site Access. Several access road alignments between NFSR 517, NFSR 300, and the proposed communication facility at Middle Bald Mountain were considered as well as alternative means of access, such as construction by helicopter and foot-only access for operation and maintenance.
- Power Source. In addition to reliance on commercial power sources, the use of renewable energy at the Middle Bald Mountain site was evaluated.
- Power Line Route. Alternate routes and system designs were considered.
- Alternate Communication Systems. The possibility of utilizing a satellite-based system was evaluated.
- Site Designations. The possibility of designating the site for other types of uses, including use by non-governmental and commercial users, was considered.

Public comments on this project expressed concerns about the extent of impacts to both physical resources and the importance of intangible qualities such as the sense of place, wildness, isolation, etc. Sensitive to those comments, throughout the alternatives development process the Forest Service and Larimer County maintained an active search to identify alternative site locations that would meet the project purpose and need and have fewer resource impacts than the Middle Bald Mountain site. After considerable searching, one such location, referenced herein as the Killpecker site, was identified. The Killpecker site is located at a similar elevation approximately 0.5 mile to the northwest of the Middle Bald Mountain site. An on-the-ground evaluation conducted by Pericle Communications Company (Pericle 2013) demonstrated that development of the site would result in radio communication improvements at least as good as the Middle Bald Mountain site. This, combined with preliminary resource evaluations indicating that the Killpecker site would have minimal or no impacts on cultural, recreation, visual, vegetative, and soils/watershed/hydrologic resource impacts compared to the Middle Bald Mountain site. This resulted in a decision to carry the Killpecker site forward as the Forest Service Preferred Alternative in the EIS. The locations of the proposed Middle Bald Mountain site and the alternative Killpecker site are shown on **Figure 2-1**.

Figure 2-1 Communication Site Alternatives



The alternatives to be carried forward for analysis in the EIS are described in detail in Section 2.2 below. Alternatives dismissed from further analysis, and the rationale for their dismissal, are described in Section 2.7.

2.2 Alternatives Considered in Detail

2.2.1 No Action Alternative

Under the No Action alternative, the Forest Service would not authorize Larimer County to construct and operate a communication site for government entity use in the vicinity of Middle Bald Mountain. Larimer County would continue to use the Deadman communication site, and the communication improvement objectives of the County and other government users would not be achieved. Inadequate VHF and no 800 MHz radio communication coverage would continue for emergency service providers and other public safety agencies in north central Larimer County and the Poudre Canyon.

2.2.2 Proposed Action: Government-Only Communication Site at Middle Bald Mountain Summit

2.2.2.1 Site Location

Under the Proposed Action the Forest Service would issue an authorization to Larimer County for the construction and operation of a radio communications facility at the summit of Middle Bald Mountain for government use only (Federal, state, county, municipal). The proposed Middle Bald Mountain communication site would be located at an elevation of approximately 10,980 feet. The tower and building would hold equipment for use by Larimer County, the State of Colorado, the Fort Collins Water Department, volunteer fire departments, search and rescue organizations, and the Forest Service. Larimer County would be the lease holder and site manager. Larimer County, the State of Colorado, and the City of Fort Collins would remove their equipment from the Deadman site if the Middle Bald Mountain site were authorized. The Forest Service would co-locate at the Middle Bald site, as well. The Proposed Action would meet the purpose of and need for action by improving VHF and adding 800 MHz coverage and reliability in north central Larimer County and the Poudre Canyon for fire and medical first-responders, law enforcement, and other local, State, and Federal emergency and public services users (Pericle 2009). **Figure 2-2** shows the overall site plan at Middle Bald Mountain.

A connected action tied to an authorization of this communication site is Forest Service authorization to Poudre Valley Rural Electric Association (PVREA) for the construction, operation, and maintenance of an overhead distribution power line to serve the communication site. The ROW width for the power line would be 20 feet (10 feet on each side of the center line). The new power line would connect from PVREA's existing infrastructure near Red Feather Lake, west alongside the Deadman Road (County Road 162) to its junction with the Killpecker Road, then south alongside the Killpecker Road (NFSR 300) to its junction with NFSR 517. The power line would go east along NFSR 517 to the point at which the proposed access road will leave NFSR 517. The overhead power line would continue alongside the access road to the point at the access road stops at the eastern edge of the trees bordering the meadow at the Middle Bald Mountain summit. The power line would then be buried by trenching it in across that meadow to the communication site building near the summit.

The proposed Middle Bald Mountain communication site is located in MA 5.11 (Emphasis on General Forest and Intermingled Rangeland). If the Decision is to authorize a designated communication site, the Forest Plan would be amended to designate the approximately 0.5 acres encompassing the proposed facilities as MA 8.3 (Utility Corridors and Electronic Sites).

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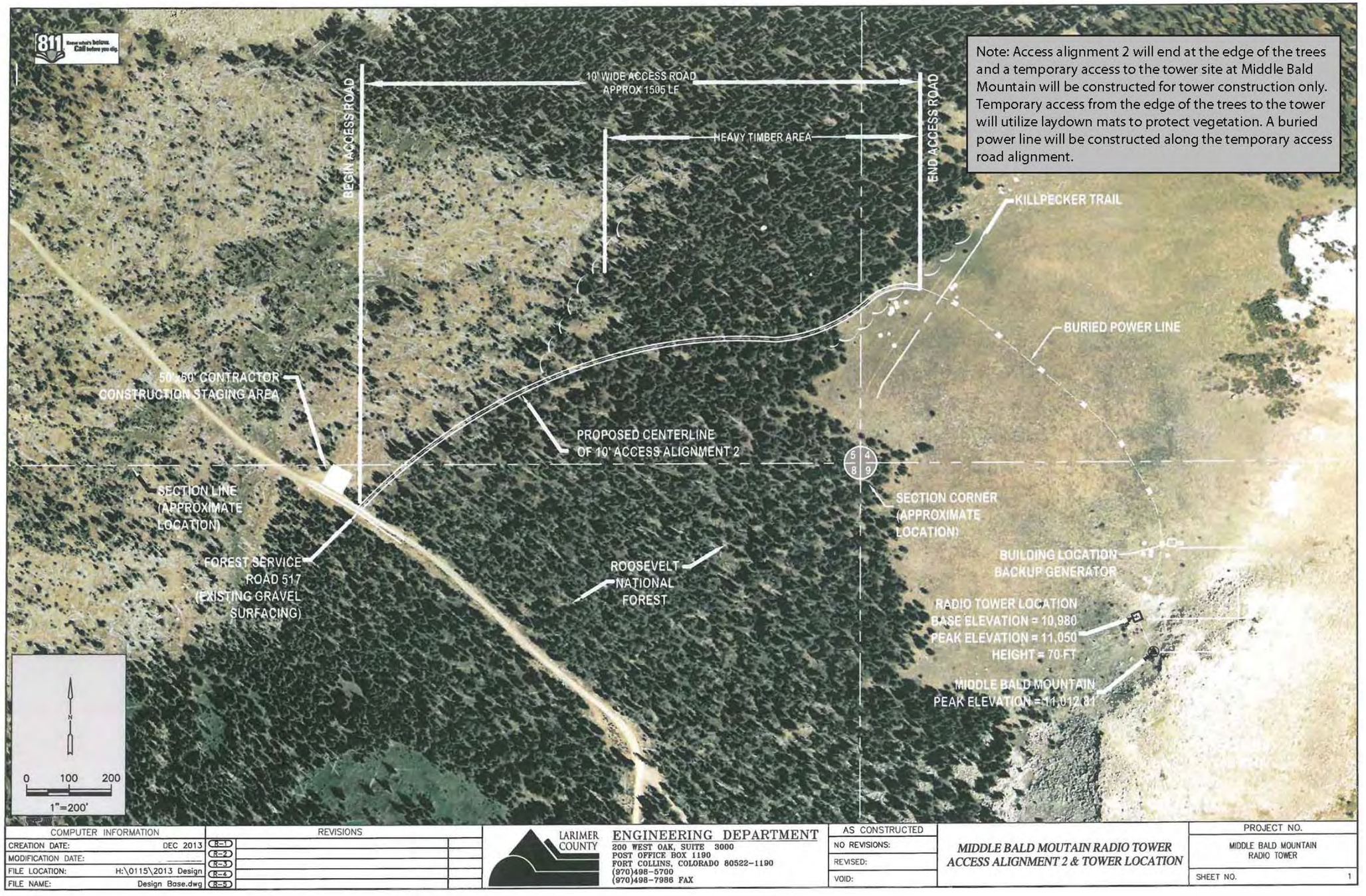
Figure 2-2 Middle Bald Mountain Site Layout



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2.2.2.2 Tower Location and Design

The proposed tower at Middle Bald would be a self-supporting, three-legged, steel lattice tower approximately 70 feet in height. At the base, the distance between each of the three legs would be six feet. The tower would be situated approximately 190 feet from the equipment building on a 20-foot by 20-foot concrete pad. There would be no guy wires.

The tower would include a ladder with an anti-climb guard to prevent unauthorized access. A galvanized finish with a low reflectivity (after weathering) would be used on the tower. The tower would require no lights; per FAA regulations only towers 200 feet or more in height must be lighted (47 U.S.C. §17.21). The concrete footings for each of the three tower legs would be buried to a depth that cannot be determined without a detailed soil and engineering analysis. If the site is authorized, this analysis would be conducted prior to construction. Depending on the depth required, substantial soil and rock disturbance could be necessary.

Equipment on the tower would include a six-foot diameter microwave dish (painted sky blue or grey, color to be selected and/or approved by the Forest Service in the Communication Site Plan), two fiberglass antennae (each 11 feet long) for the 800 MHz radios, one omni-directional fiberglass antenna five feet in length, four dipole masts (each 10 feet long) each with two dipole antennae for the VHF radios, and a tower-top signal amplifier with the approximate dimensions of six 6 x 6 x 12 inches.

2.2.2.3 Building Location and Design

A rectangular, approximately 192 square-foot (12 feet by 16 feet) single-story modular equipment building approximately 10 feet high would be constructed on a 16-foot by 20-foot concrete building pad approximately 190 feet from the tower. The building would be a transportable shelter designed to be skid-mounted onto a concrete slab or pier foundation. It would be designed and camouflaged to blend in with the terrain to the greatest extent possible. An example of building camouflage that could be used to blend the building in with its surroundings is provided in **Figure 2-3**. In addition, a separate 10x6-foot concrete slab would be needed about eight feet from the building to support the backup generator, which could also be camouflaged. All building materials, camouflaging, and slab profile, texture, and color would be selected and/or approved by the Forest Service in the Communication Site Plan.

2.2.2.4 Site Access

An approximately 10-foot wide access road surfaced with native material would extend about1,600 feet from NFSR 517 to the east edge of the line of trees on the western border of the summit meadow. The access road alignment would not extend east beyond the edge of the trees, so would not cross the open meadow to the building or tower (**Figure 2-2**). Instead, load-spreading mats would be laid across the meadow during construction of the building and tower to protect vegetation and soils near the summit. Post-construction, the access road from NFSR 517 to the east end of the edge of the trees would be rehabilitated to a minimal width needed for site maintenance, and gates would be installed at both ends.

Larimer County Technical Communications personnel would access the site at least monthly for routine maintenance. During summer months (when Forest Service roads are open to wheeled vehicles) access to the end of the road would be by pick-up truck or sport utility vehicle. Normal access to the site from the end of the road would be on foot. For special maintenance needs (test equipment or site equipment that is not portable by foot) and for generator re-fueling, access across the meadow from the end of the access road would be by turf-tired utility terrain vehicle (UTV). The route for overland travel between the end of the access road and the building or tower would be varied every visit, whether travel is by foot or vehicle. During winter months, the facility would be accessed using an over-the-snow vehicle when sufficient snow depth is present, or on foot. When feasible, deliveries of equipment or fuel would be scheduled when snow is present so that transport of equipment and fuel could be accomplished with an over-the-snow vehicle and trailer.

Figure 2-3 Examples of Building Location and Design

Example of a building and tower similar to proposed facilities

Example of camouflage techniques – texture and color – that could be used to blend the building in with its surroundings.

2.2.2.5 Power Source and Power Distribution Line Route

Unlike VHS systems that are powered only when a microphone is keyed, 800MHz systems must be fully powered all the time. To meet that need and to power the communication facility's radio equipment, interior lights, receptacles, heating, and cooling systems, the Forest Service would authorize an extension of the commercial electrical power grid from Red Feather Lakes to PVREA to construct, operate, and maintain a 7.2 kV power line which would be installed overhead along County Road 162 (Deadman Road), NFSR 300, NFSR 517, and alongside the access road to the edge of the trees bordering the open meadow of the summit. From that point, a backhoe or spider-hoe would be used to trench in the power line across the meadow to the equipment building.

The power line would have a total length of approximately 12.8 miles and would be installed on 29-foot tall wooden monopoles for most of its length. The span between the overhead poles would range from 240 to 280 feet, and approximately 260 poles would be installed along the proposed alignment for the power line. The final stretch of power line across the meadow to the equipment building (about 900 feet) would be installed in an eight-inch wide and 41-inch deep trench along the alignment shown in **Figure 2-2**. Larimer County would operate and maintain the underground section of the power line, and authorization for this section of the power line would be included in the communication site lease.

The power and communication feed lines between the tower and the equipment building would run in an approximately 190-foot long galvanized steel cable tray 12 inches wide and three inches tall. The cable tray would be mounted about three inches above the ground on pre-fabricated concrete anchors spaced 10 feet apart. The tray to the tower would be armored to protect against vandalism and camouflaged to blend with the surroundings. The cable itself would be armored between the point that it emerges from the tray, to the tower, and for some distance up the tower.

The proposed facility would also include a backup generator for use in the event of interruption of commercial power. The generator would be a 20 kW diesel generator with a 204-gallon, double–walled, EPA-approved belly diesel fuel tank. The generator and diesel tank would be placed on a 10-foot by 6-foot reinforced concrete pad outside the building. The generator would be armored to protect against vandalism and camouflaged to blend with the surroundings. All camouflaging and concrete pad profile, texture, and color would be selected and/or approved by the Forest Service in the Communication Site Plan.

2.2.2.6 Radio Coverage

Pericle Communications Company (Pericle) conducted a drive test survey to measure radio coverage for both VHF and 800 MHz radio coverage with a transmitter near the summit of Middle Bald Mountain (Pericle 2009). Drive routes included, but were not limited to County Road 74E from U.S. 287 to Red Feather Lakes, County Road 103 from CO 14 to Four Corners, and CO 14 from Cameron Pass to U.S. 287. Based on the drive test results, Pericle concluded that the Middle Bald Mountain site would provide 99.3% coverage for VHF over the specified drive routes. The Middle Bald Mountain site improves 800 MHz coverage from the existing Digital Trunked Radio System (DTRS) sites from 48.2% to 87.9%.

2.2.3 Environmentally Preferred and Forest Service Preferred Alternative: Government-Only Communication Site at the Killpecker Site

2.2.3.1 Site Location

The range of reasonable alternatives was developed with the help of public comments during the two scoping processes, which highlighted specific issues. Issues raised by the public prompted an alternative site to be located. Under this alternative action the Forest Service would issue an authorization to Larimer County for the construction and operation of a government-only communication site at the Killpecker site. The Killpecker site is located approximately one-half (0.5) miles northwest of the Middle Bald Mountain site, at an elevation of approximately 11,014 feet. The tower and building would hold equipment for use by Larimer County, the State of Colorado, the Fort Collins Water Department,

volunteer fire departments, search and rescue organizations, and the Forest Service. Larimer County would be the lease holder and site manager. Larimer County, the State of Colorado, and the Fort Collins Water Department all use the Deadman communication site now and would remove their equipment from the Deadman site if the Killpecker site were authorized. The Forest Service would co-locate at the Killpecker site, as well. The Killpecker communication site would meet the purpose of and need for action by improving VHF and adding 800 MHz coverage and reliability in north central Larimer County and the Poudre Canyon for fire and medical first-responders, law enforcement, and other local, State, and Federal emergency and public services users (Pericle 2013). The Environmentally Preferred Alternative to authorize a communication facility at the Killpecker site, is the Forest Service's preferred alternative. **Figure 2-4** shows the overall site plan for the Killpecker site.

A connected action tied to an authorization of this communication site is that the Forest Service would issue an authorization to PVREA for the construction, operation, and maintenance of an overhead distribution power line to serve the communication site. The new power line would connect from PVREA's existing infrastructure near Red Feather Lake, west alongside the Deadman Road (County Road 162) to its junction with the Killpecker Road, then south alongside the Killpecker Road (NFSR 300) to its junction with the access road. The overhead power line would continue alongside the access road to the communication site building at the Killpecker site.

The Killpecker communication site is located in MA 5.11 (Emphasis on General Forest and Intermingled Rangeland). If the Decision is to authorize a designated communication site, the Forest Plan map would be amended to designate approximately 0.5 acres within the designated communication site boundary as MA 8.3 (Emphasis on Utility Corridors and Electronic Sites).

2.2.3.2 Tower Location and Design

Just as at the proposed Middle Bald location, the proposed tower at the Killpecker site would be a self-supporting, three-legged, steel lattice tower approximately 70 feet in height. At the base, the distance between each of the three legs would be six feet. The tower would be located approximately 20 feet from the equipment building on a 20-foot by 20-foot concrete pad. There would be no guy wires.

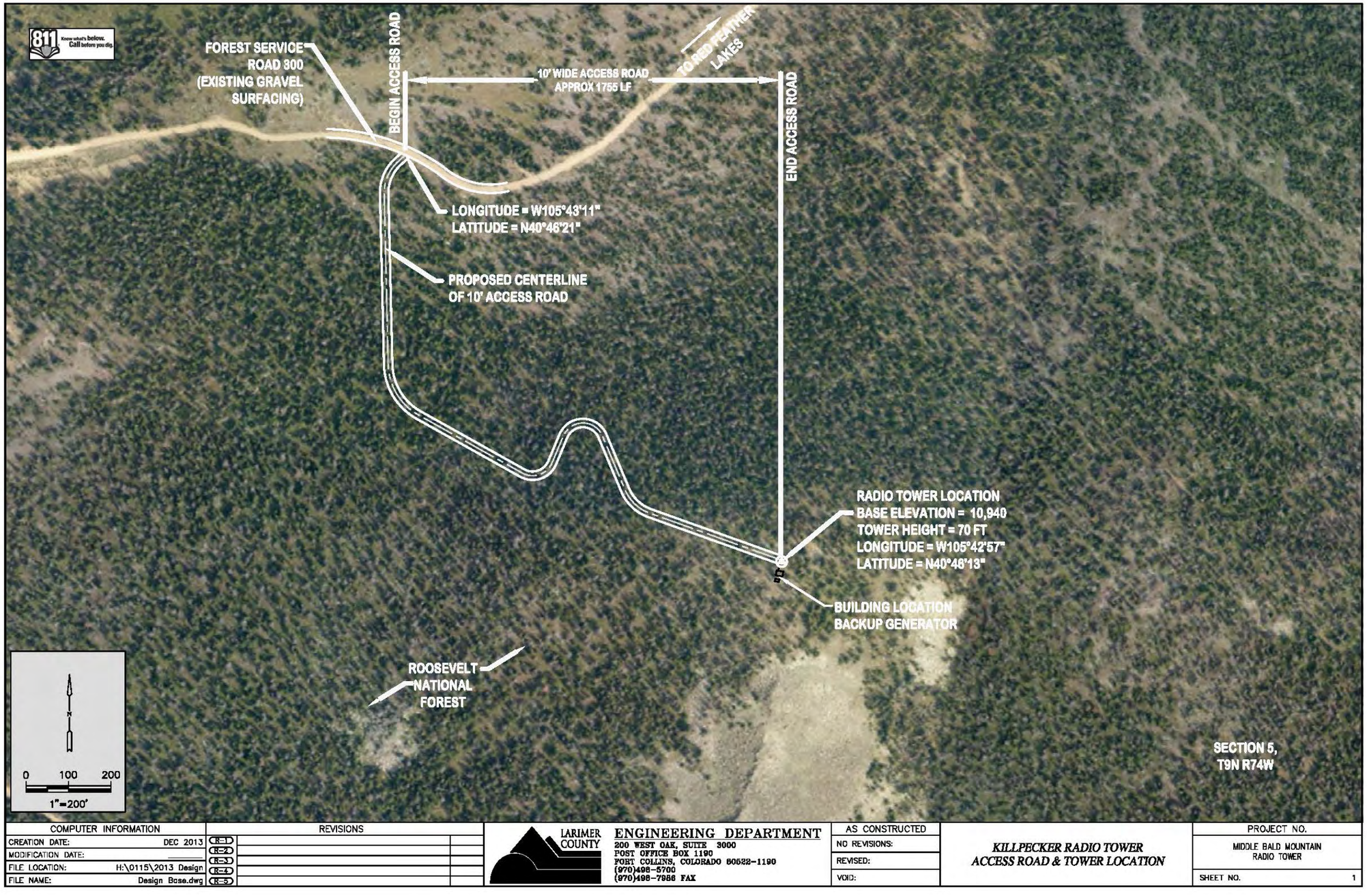
The tower would include a ladder with an anti-climb guard to prevent unauthorized access. A galvanized finish with a low reflectivity (after weathering) would be used on the tower. The tower would require no lights; per FAA regulations only towers 200 feet or more in height must be lighted (47 U.S.C. §17.21). The concrete footings for each of the three tower legs would be buried to a depth that cannot be determined without a detailed soil and engineering analysis. If the site is authorized this analysis would be conducted prior to construction. Depending on the depth required, substantial soil and rock disturbance could be necessary.

Equipment on the tower would be the same as on a tower at the Middle Bald site: a six-foot diameter microwave dish; two 11 foot fiberglass antennae for the 800 MHz radios; one five foot omni-directional fiberglass antenna; four 10 foot dipole masts, with two VHF dipole antennae each; and a tower-top signal amplifier.

2.2.3.3 Building Location and Design

A rectangular, approximately 192 square-foot (12-foot by 16-foot) single-story modular equipment building approximately 10 feet high would be constructed on a 16-foot by 20-foot concrete building pad, up to 20 feet away from the tower. The building would be a transportable shelter designed to be skid-mounted on a concrete slab or pier foundation. It would be designed and camouflaged to blend in with the terrain to the greatest extent possible. An example of building camouflage that could be used to blend the building in with its surroundings is provided in **Figure 2-3**. A separate 10x6-foot concrete slab about eight feet from the building would be needed to support the backup generator. All camouflage and concrete slab profile, texture, and color would be approved by the Forest Service in the Communication Site Plan.

Figure 2-4 Killpecker Site Layout



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2.2.3.4 Site Access

A permanent approximately 10-foot wide access road surfaced with native material would extend about 1,800 feet from NFSR 300 to the communication facility at the Killpecker site. The Killpecker site would have road access all the way to the communication site building and tower (**Figure 2-4**), and access for monthly operations and maintenance visits would be unconstrained as long as the road remains snow-free. When snow prevents access by a high-clearance vehicle, access would be by over-the-snow vehicles or on foot. The access road would be added to the system as an administrative road and would be gated where it leaves NFSR 300.

2.2.3.5 Power Source and Power Line Route

Power for the communication facility's radio equipment, interior lights, receptacles, heating, and cooling systems would be provided by an 11.6 mile extension of the commercial electrical power grid from Red Feather Lakes. In a connection action, the Forest Service would authorize PVREA to construct, maintain, and operate a 7.2 kV power line which would be installed overhead along County Road 162 (Deadman Road), NFSR 300, and alongside the access road to the communication facility.

The power line would be installed on 29-foot tall wooden monopoles for most of its length. The span between the overhead poles would range from 240 to 280 feet, and approximately 235 poles would be installed along the proposed alignment for the power line.

The power and communication feed lines between the tower and the equipment building would run in an up to 20-foot long galvanized steel cable tray 12 inches wide and three inches tall. The cable tray would be mounted overhead between the building and tower. The tray to the tower would be armored to protect against vandalism and camouflaged to blend with the surroundings.

The proposed facility would also include a backup generator for use in the event of interruption of commercial power. The generator would be a 20 kW diesel generator with a 204-gallon, double–walled, EPA-approved belly diesel fuel tank. The generator and diesel tank would be placed on a 10-foot by 6-foot reinforced concrete pad outside the building. The generator would be armored to protect against vandalism and camouflaged to blend with the surroundings. All camouflage and concrete slab profile, texture, and color would be approved by the Forest Service in the Communication Site Plan. The operating noise level of a diesel generator at 23 feet is approximately 77 decibels, but units vary depending on the manufacturer selected. Some manufacturers have units with substantially lower noise levels, e.g. 65 decibels. For comparison purposes, an air conditioner operating at 20 feet distance is 60 decibels (http://wordinfo.info/unit/620/ip:1/il:D).

2.2.3.6 Radio Coverage

Pericle conducted a drive test survey in 2013 to in order to measure the performance of the Killpecker site and compare it to the performance of the Middle Bald Mountain site (Pericle 2013). The report concluded that the Killpecker site would produce, on average, signals 7.5 dB stronger than the Middle Bald Mountain site in the Poudre Canyon.

2.2.4 Comparison of Project Components by Site

A comparison of project components proposed for the Middle Bald Mountain and Killpecker communication sites is provided in **Table 2-1**.

Table 2-1 Comparison of Project Components

Project Component	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site
Site designation	Government Only	Government Only

Project Component	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site
Area to be designated as MA 8.3	0.5 acre	0.5 acre
Tower height	70 feet	70 feet
Building size (approx.)	192 square feet	192 square feet
Building design	Fiberglass or steel/composite transportable shelter; camouflaged to blend with the surroundings	Fiberglass or steel/composite transportable shelter, camouflaged to blend with the surroundings
Distance between tower and building	190 feet	20 feet
Power source	Commercial electric power with back-up generator	Commercial electric power with back-up generator
Power line length	12.8 miles	11.6 miles
Power line construction	Overhead from CR 162 to the end of the access road; then underground to the communication site	Overhead from CR 162 to the communication site with no underground segment.
Site access	1,558-foot new access road extending from NFSR 517 to the edge of the trees west of the summit; overland from end of access road to the communication site	1,755-foot new access road extending from NFSR 300 to the communication site
Vehicle restrictions	Access between the end of the access road and the equipment building would be by foot, turf-tired UTV, or snowmobile	None

2.3 Activities Common to All Action Alternatives

2.3.1 Construction Sequencing and Equipment

2.3.1.1 Communication Facility and Access Road

Construction of the proposed communications facility would require the use of various pieces of heavy equipment, such as a crane to place the shelter and erect the tower; and delivery trucks that would pull trailers to carry tower sections, the building, and generator. One 50-foot by 50-foot construction staging area would be located near the intersection of the access road and the nearest NFSR (either NFSR 517 or NFSR 300). Construction of the communication facility would begin at the nearest NFSR and proceed toward the building and tower. Construction operations would begin by first defining a construction corridor, staking the limits of disturbance and installing initial temporary erosion control best management practices (BMPs) followed by clearing the access road alignment of debris and removing trees and vegetation as necessary for safety. Topsoil would then be stripped and stockpiled to be re-used on finished slopes. Construction of the access road would then begin with excavation/embankment operations and culvert installation. Two 10-foot wide by 50-foot long temporary construction turnouts would be located alongside the new access road. Once the access road is completed, construction of the building and generator sites would be completed, followed by construction of the tower foundation and erection of the tower. Approximately 20 cubic yards of concrete are required for the building and tower foundations; concrete would be poured from a concrete truck directly to the ground, at the

Killpecker site. Concrete would have to be delivered to the tower location on Middle Bald Mountain via a 190 foot boom. The final stage of construction would include placement of the building and generator, and installation of the communication cables between the building and the tower. Upon completion of construction, final erosion control BMPs, including seeding and mulching, would be completed as approved by the Forest Service in the Communication Site Plan, and required gates placed.

It is anticipated that power line construction would take three to four months. Access road and communication site construction is anticipated to take one month; an additional two weeks would be needed to install electronics and bring them to operational status. This is all anticipated to occur in a single summer season. Construction of the proposed project is anticipated to employ approximately 16 workers.

2.3.1.2 Power Line Installation

Poudre Valley REA (PVREA) is currently authorized by the Forest Service to operate and maintain all their power lines on National Forest System lands on the Canyon Lakes Ranger District under a master special use permit. If the proposed action were approved, PVREA would submit an application and construction design plans for the new power line. After review of the plans the Forest Service would issues a temporary permit and construction plan with any required design criteria. After the power line is built, PVREA would submit as-built plats and the line would be amended to their master special use permit.

Wood poles for power line installation would be set in augured holes with an 18-inch diameter and average depth of six feet. Auguring and pole installation would be accomplished with a Digger Derrick truck or rubber-tired backhoe from roadways paralleling the power line. Poles would be installed approximately 10 feet off the edge of the road. Where the road curves, poles would be set at the radius of the curve and secured with anchor rods. The power line would typically cross over the road at these points. From the existing alignment of the roads, PVREA estimates that the installed power line would cross over the roads 30 to 40 times in either alternative.

The overhead power line would require a minimum clearance of vegetation tall enough to interfere with the power line from under the power line, and to a distance of 10 feet on either side of the centerline of the right-of-way (ROW). Hazard trees would be removed up to a distance of 50 feet either side of the centerline. Some of these trees may be cleared as a result of a hazard tree removal project planned by the Forest Service in this area.

Construction activities and equipment required for construction of the communication site, access road, and power line are described in **Table 2-2**.

Table 2-2 Construction Activities and Equipment

Task	Equipment
Construction Staking	Survey Grade GPS, Pickups, All Terrain Vehicles
Initial Erosion Control	Backhoe, Loader, Trencher
Strip and Stockpile Topsoil	Dozer, Loader, Excavator, Blade, Dump Trucks
Unclassified Excavation	Dozer, Loader, Excavator, Blade, Dump Trucks, Water Truck
Culvert Installation	Excavator, Backhoe, Loader, Compactor, Dump Trucks
Power Pole Installation	Digger Derrick Truck, Backhoe
Aggregate Base for Facilities	Blade, Grading Tractor, Roller, Dump Trucks, Water Truck

Task	Equipment
Building Foundation/ Generator Slab	Excavator, Backhoe, Loader, Blade, Grading Tractor, Dump Trucks, Water Truck, Compactor, Concrete Trucks (with 190' boom for Middle Bald site)
Tower Foundation	Caisson Drill, Excavator, Loader, Concrete Trucks
Set Building / Generator	Crane, Delivery Trucks
Erect Tower	Delivery Trucks, Crane,
Install Communication Cables	Track Skid Steer, Pickups, Backhoe, Excavator
Final Erosion Control	Backhoe, Loader, Trencher, Hydro seeder/Hydro Mulcher, Water Truck,

2.3.2 Operation and Maintenance Activities

A Communication Site Management Plan would be developed that is attached to and made a part of the special use authorization that would be issued to Larimer County. The Site Management Plan would document the policies, procedures, and standards that would be used to administer the communication site, including policies, procedures, and standards related to general operation and maintenance of equipment, site maintenance (including noxious weed management), fire prevention and hazard reduction, spill prevention control and countermeasures, and security and law enforcement.

Larimer County Technical Communications personnel would access the site at least monthly for routine maintenance. In addition, Larimer County would conduct an annual, certified inspection of the facilities and equipment covered by the authorization. The inspection would include a technical review that should ensure that all authorized equipment is operating in accordance with requirement of the site management plan, the applicable Federal Communications Commission license or National Telecommunications and Information Administration authorization, American National Standards Institute standards, and the manufacturer's specifications. In addition, the inspection would ensure that the authorized equipment is secure, free of rust, properly grounded, and otherwise properly operated and maintained. A copy of the inspection report, certified by a telecommunication specialist, would be provided to the Forest Service within 30 days of completion of the inspection. The Forest Service may also conduct periodic reviews to monitor for authorization compliance.

Generator re-fueling would normally take place once annually, but is dependent on the number and duration of commercial power outages. Replacement of site batteries would take place about every seven years. Additional special or major maintenance actions are dependent on equipment failures, replacements and required upgrades to VHF or 800 MHz systems.

2.4 Design Criteria and Construction Best Management Practices

2.4.1 Design Criteria

- The profile, texture, and color of all development structures will be approved by the Forest Service in the Communication Site Plan.
- Design and construction of the power line will conform with the Suggested Practices for Avian Protection on Power Lines (Avian Power Line Interaction Committee 2006).
- Pole placement for power line installation will avoid Site 5LR11364.3 (Old Deadman Road) and historic water control features along Deadman Road (Site 5LR11364).
- The power line will be constructed so that, anywhere the power line crosses over a road, there will be a minimum of 18-vertical clearance between the road surface and the power line.

- PVREA will submit design and construction plans prior to construction; the plans will be approved by the Forest Service prior to construction.
- Vegetation clearance under the power line will be limited to that which is tall enough to interfere with the power line, to a distance of 10 feet on either side of the centerline of the ROW. Hazard trees will be removed up to 50' on either side of the power line. All trees removed will be chipped and spread on the existing forest floor to a depth no thicker than three inches, masticated and spread on the existing forest floor to a depth no thicker than six inches, or removed as timber product. Vegetation removal during trenching for the power line between the end of the access road and the equipment building at the Middle Bald Mountain site will be accomplished using "tundra protection" procedures that have proven effective elsewhere for burying cables in similar environments. These techniques call for careful removal of the intact surface layer (similar to removing turf grass sod, but more difficult in shallow rocky soils). This material is set aside, and then replaced after the power line is laid in the trench. Additional restoration and revegetation is performed as needed, based on at least several years of monitoring.
- Disturbance for construction of access roads will be limited to an approximately 18-foot wide corridor through old growth cover types. This will allow for an approximately 10-foot wide travelway and a 4-foot wide clearing limit on either side of the access road.
- No surface disturbance will occur within 100 feet of the known population of the rare plant *Pyrola picta* identified along NFSR 300. A trained botanist must be present during vegetation removal for construction and ROW maintenance near the known population.
- Wetland and waterbody surveys will be conducted prior to construction in areas to be disturbed for the power line along NFSR 300. All wetlands and waterbodies will be strictly avoided. No surface disturbance (including overland vehicle travel) will occur within 100 feet of wetland or riparian areas. All vegetation thinning within riparian or wetland areas will be completed either by hand or from the road. If wetlands and waterbodies cannot be avoided, consultation with the Forest Service to determine additional mitigation will be required, and features identified as jurisdictional during surveys will require consultation with the U.S. Army Corps of Engineers.
- Access roads are designed as Level 2 roads with a minimum traveled width of 10 feet. Level 2 roads are not crowned but may be ditched depending on the surrounding topography. Grades below 8% are maintained wherever possible; however 8%-12% grades may be maintained for less than 200 feet. Local materials are used, however these materials are generated from within road profile itself and it is rarely necessary to obtain additional material. Branches and vegetation are cleared 4 feet on each side of the traveled way.
- Soil preparation, soil conditioning or topsoil, seeding, mulching, and mulch tackifier will be required to restore areas temporarily disturbed by construction. Disturbed surfaces will be left in a roughened condition by equipment tracking, scarifying or disking the surface on contour with a two- to four- inch minimum variation in soil surface, depending on the amount of equipment traffic and compaction. A mix of native seed will be drilled into disturbed areas except in small areas not accessible to a drill; in those areas, seed will be hand broadcast at double the application rate, and raked into the soil. Hydromulch will be applied to all seeded areas immediately following the application and raking of seed. An organic soil conditioner (i.e., compost, topsoil, peat, mulch or similar) will also be applied to all seeded areas, per Forest Service specification.
- Restoration activities will conform to the Forest revegetation policy and must be approved in advance by the Forest Botanist or botanical representative.
- Prior to construction, the load capacity of load-spreading mats and construction equipment weights will be used to determine the number of passes construction equipment could take on any given route across the meadow at the Middle Bald Mountain site. Mats may occasionally have to be moved to alter the route between the site and the edge of the trees to minimize rutting.

- A Spill Prevention Control and Countermeasure Plan will be included in the Site Management Plan that is attached to and made a part of the special use authorization.
- Amphibian surveys.
- Preconstruction raptor nest surveys and additional consultation with the USFS on protection buffers.

2.4.2 Construction Best Management Practices

Construction best management practices to be implemented during project construction are described in Sections 2.4.2.1 through 2.4.2.4 below.

2.4.2.1 Materials Handling and Spill Prevention

- Bulk storage structures for petroleum products and any other chemicals will have secondary containment or equivalent protection so as to contain all spills and prevent any spilled material from entering State waters.
- The construction contractor will inspect and certify equipment and vehicles daily to ensure petroleum, oils, and lubricants are not leaking onto the soil or pavement. Absorbent material or containers will be used to prevent leaking petroleum, oils, and lubricants from reaching the soil or pavement. The contractor shall have absorbent material or containers of sufficient capacity to contain any leak that can reasonably be foreseen.
- Surplus construction materials and waste debris will be removed from the site no later than 30 days after construction has been completed.

2.4.2.2 Stockpile Management

- Any material stockpiles will be located away from sensitive areas and confined so that no material or their run-off will enter State waters.
- Silt fence, berms or other sediment control devices will be placed at the toe (or just beyond toe) of all erodible stockpiles (including topsoil).
- There will not be stockpiling or side casting of waste materials adjacent to any State waters.

2.4.2.3 Vehicle Tracking

- Vehicle and equipment inspection for noxious and undesirable weeds will occur prior to site entry and each re-entry. Inspectors, inspection rejection thresholds, and washing stations will be determined by the Forest Service prior to project implementation.
- The construction contractor will certify that construction equipment has been cleared prior to site arrival, and again prior to leaving the staging area on NFSR 517 or NFSR 300, where weeds are known to be present. Vehicles shall be free of soil and debris capable of transporting noxious weed seeds or roots onto the construction site.

2.4.2.4 Storm Water Management

- A site-specific erosion control plan will be provided to the Forest Service for approval by the Forest Service prior to commencement of construction.
- Surface runoff from above the access road will be captured and directed along the roadside to outlet pipes. All outlet pipes will be protected with erosion logs at the downstream end.
- Perimeter control will be established to prevent the potential for pollutants leaving the construction site boundaries. Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMPs as approved.

- Concentrated discharge points will be protected with erosion control structures and erosion logs at the outlet end.

2.5 Construction Disturbance

2.5.1 Temporary and Long-term Disturbance Area Calculations

Temporary and long-term disturbance areas for construction and operation of a communication site at the Middle Bald Mountain Site or Killpecker Site are summarized in **Table 2-3**.

Table 2-3 Comparison of Temporary and Permanent Disturbance Areas

Project Component	Proposed Action Middle Bald Mountain Site	Preferred Alternative Killpecker Site
Temporary Disturbance (acres)		
Communication site	0.5	0.3
Staging area and turnouts	0.1	0.1
Access road	2.1	2.4
ROW clearing and overhead power line installation	31.0	28.1
Underground power line construction*	1.1	-
Total	**34.8**	**30.9**
Long-term Disturbance (acres)		
Communication site	<0.1	<0.1
Access road	0.4	0.4
Trench for underground power line*	<0.1	-
ROW maintenance	31.0	28.1
Total	**31.5**	**28.5**

*Middle Bald Mountain Site only

2.6 Monitoring

2.6.1 Cultural Resources

If the Proposed Action is selected, a monitoring program would be implemented during construction of the communication site at Middle Bald Mountain to ensure avoidance of recorded Site 5LR13190.

2.6.2 Radiation

All communications uses shall meet American National Standards Institute, Federal Communications Commission, and Forest Service regulations, policy, guidelines, and standards concerning radiation limitations.

Monitoring radiation levels at the site is the responsibility of all site users and shall occur at intervals to comply with regulations and guidelines. A copy of the monitoring report shall be provided to the Forest Service within 30 days of its completion.

Onsite radio frequency radiation (RFR) measurements shall be taken using appropriate equipment that can adequately measure levels both on the tower and on the ground before mitigation measures related to RFR are implemented.

Security fences with RFR notice signs are required around areas that exceed public use levels. All fencing location and design shall be pre-approved by the Forest Service in the Communication Site Plan.

Any identified RFR problems that are, or could be, a human health hazard shall be corrected within 24 hours after measurement tests have been completed, or the equipment involved shall be removed from the site by the site user. Any ground disturbance associated with correction of RFR problems or removal of equipment causing the problem must have prior written approval of the Forest Service authorized officer.

2.7 Alternatives Eliminated from Further Analysis

CEQ regulations for implementing NEPA require that Federal agencies explore and objectively evaluate all reasonable alternatives, and briefly discuss the rationale for eliminating any alternatives that were not considered in detail. This section describes alternatives to site location, site designation, tower configuration, building design and location, access road route and design, power source, power line route, and alternate technologies that were considered and eliminated from further study. The rationale for elimination is provided in Sections 2.7.1 through 2.7.5 below.

2.7.1 Other Communication Site Locations

Alternative locations for the communication facility that were considered but eliminated from further analysis are described in Sections 2.7.1.1 through 2.7.1.4 below.

2.7.1.1 Deadman Communication Site

Larimer County currently operates a VHF radio communications facility at the Deadman Communication site and Deadman fire lookout tower on the Roosevelt National Forest (Section 13 T.10N R.75, 6th PM) (**Figure 1-1**). The Forest Service and AT&T Cellular also have communication facilities at this site. This site serves the northern and northwestern portion of Larimer County and has microwave connectivity. However, the existing 60-foot tower provides poor coverage of the Poudre Canyon. At this location, achieving improved VHF coverage in the Poudre Canyon would require a new, lighted tower at least 500 feet tall for aircraft safety. The visual impact of a 500-foot tower would be substantial. This location was dismissed because of the height and the lighting requirements for the tower. Lighted towers increase the potential for fatal collisions between the structure and migratory birds protected by the Migratory Bird Treaty Act (USFWS 2012). Even if commercial power were available, the Deadman site would not provide adequate coverage or signal strength for an 800 MHz system in north-central Colorado or in the Poudre Canyon (Pericle 2009)North Bald Mountain

A tower at North Bald Mountain would meet the radio connectivity and coverage criteria, but it would have to be at least 300 feet tall and lighted to comply with FAA regulations (47 U.S.C. §17.21). Light on towers increase the potential for fatal collisions between the structure and migratory birds protected by the Migratory Bird Treaty Act (USFWS 2012). The visual impact of a 300-foot tower would also be substantial. The North Bald Mountain site currently has no road or trail access. Improvements would be required from either NFSR 300 (0.5 mile) or NFSR 517 (1.5 mile) over steep and rocky terrain. This location was dismissed due to requirements for a 300-ft tall lighted tower and new road construction in difficult terrain.

2.7.1.2 South Bald Mountain

A 40-foot tower on South Bald Mountain would meet the communications criteria. However, this site would have been located within the Green Ridge -East Inventoried Roadless Area at a location that did not have existing access. Although Forest Service policy (2012 Colorado Roadless Rule) does not

prohibit construction of communication sites in roadless areas, it does prohibit new road construction and cutting of trees. Construction of the communication site and long-term maintenance of the facility would not be feasible without access for vehicles. Therefore, this location was dismissed from further consideration.

2.7.1.3 Poudre Canyon Sites

Computer modeling was utilized to identify a series of five sites in the Poudre Canyon which provided adequate radio coverage improvement. This series of five sites provided radio frequency coverage for the Poudre Canyon, but provided no radio frequency coverage in areas around Red Feather Lakes, Crystal Lakes subdivision, or Glacier View Meadows subdivision, and therefore did not meet the purpose of and need for action (Larimer County 2011).

2.7.2 Other Tower and Building Locations and Designs and Access Road Alignments on Middle Bald Mountain

2.7.2.1 Tower Location and Design on Middle Bald Mountain

A second tower location closer to the true summit of Middle Bald Mountain was considered (**Figure 2-5**). A tower at this location would have been 60 feet tall, with 40 feet of the tower visible above the summit. This location was eliminated when an alternative location off the summit was identified that would have a similar height visible above the summit but was less obtrusive for recreationists hiking to the summit itself.

Placing the tower on the roof of the building to reduce the overall site footprint was also considered. This option would have required fortification of the building with steel beams and cinderblock to support the added weight and wind load. With this design, falling ice can penetrate the roof of the building. Lightning is also a concern; the tower and building must be well grounded to conduct lightning strike energy to the earth, to reduce the risk of surge finding its way into the building. Building structure, roof, and tower maintenance are also more challenging. This option was dismissed because it is not preferred for long-term viability of this site (Mieszala 2007).

2.7.2.2 Building Locations on Middle Bald Mountain

A total of six building sites were identified and evaluated near the summit of Middle Bald Mountain, including two building sites located near the edge of the trees at the summit, and one building site that was located in a forested area in close proximity to NFSR 517 (**Figure 2-5**). A key consideration in siting the equipment building is distance from the tower. Increasing cable length between the radio equipment and the antennae on the tower results in weaker signal strength. The maximum allowable length for a cable running between the equipment building and the tower site is approximately 460 feet. Although a site located in the trees would be less visible than one in the open landscape near the summit, any building site near the edge of the trees would be 1,000 feet or more from the tower, which exceeds the maximum allowable distance. Sites located near the edge of the trees were dismissed from further consideration for this reason.

Several building sites near the summit and within the maximum distance of 460 feet were also considered. These sites were evaluated based on slope and the amount of earthwork required, visibility, including whether the site was back dropped or silhouetted, amount of rock outcrop, and access considerations. Based on an evaluation of these factors, the building site shown in **Figure 2-2**, which is approximately 190 feet from the tower, was determined to be the optimum site. The other sites were dismissed.

2.7.2.3 Site Access for Middle Bald Mountain

Several road alignment and design options were considered, including several options for a constructed road that would extend past the edge of the trees to the equipment building. Although this option would

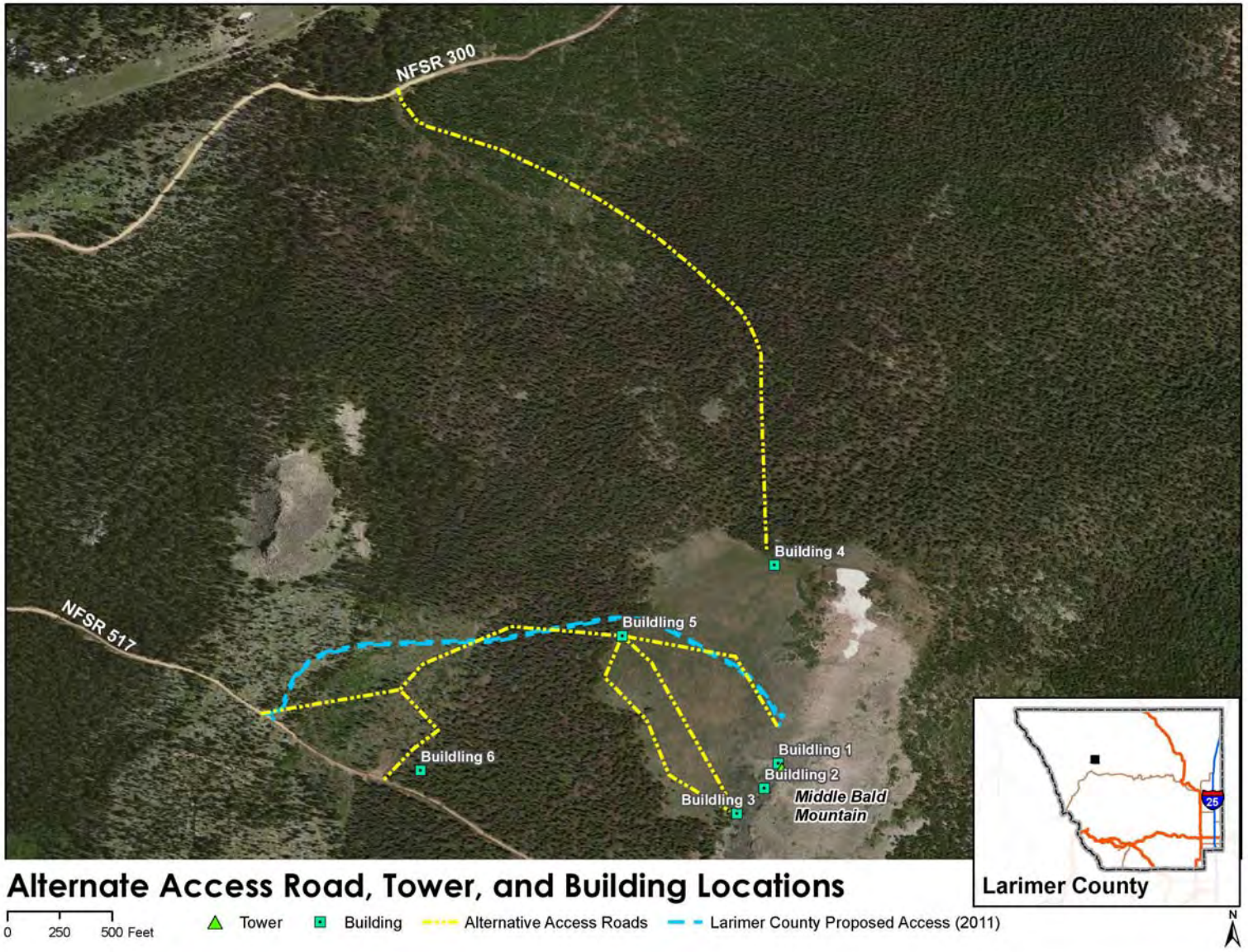
provide a higher level of site accessibility for construction and operation purposes, it would also result in greater disturbance of soils and vegetation within the meadow area and increased visual effects. Access road construction through the meadow was dismissed for these reasons. Larimer County's proposed access road, as presented in their 2011 Special Use Permit Application, was dismissed after wetland delineation determined that the access alignment crossed a wetland (fen) area. A potential access road route originating from the north at NFSR 300 was also considered, but dismissed due to the identification of difficult terrain, rock outcrops, and potential wetland areas during a site reconnaissance.

The use of helicopters for all construction, operation, and maintenance activities was also considered, eliminating the need for road improvements and associated ground disturbances. Helicopter-only access would be less reliable due to periodic weather conditions when flying is unsafe or impossible; relying on foot-only access when helicopter access was not possible would not always be feasible. Further, the main issues with road improvements extending to the facilities near the summit are associated with disturbance in the meadow beyond the edge of the trees. This issue is addressed by the proposed action, which eliminates road construction across the meadow (Section 2.2.2.4).

2.7.3 Power Sources

An uninterrupted power supply is needed to operate an 800 MHz communication system. Power for the facility's radio equipment, heating and cooling systems, and other equipment could be provided by an extension of the commercial electrical power grid from Red Feather Lakes, as in the proposed action. Several options were considered for routing commercial electrical power to the site. Power might also be provided through the use of renewable energy generated on site, or with a hybrid system. The power line route and source options considered and reasons for their dismissal are discussed in Sections 2.7.3.1 and 2.7.3.2.

Figure 2-5 Alternate Tower and Building Locations and Access Road Alignments Considered but Eliminated from Further Analysis



2.7.3.1 Power Distribution Line Route Options

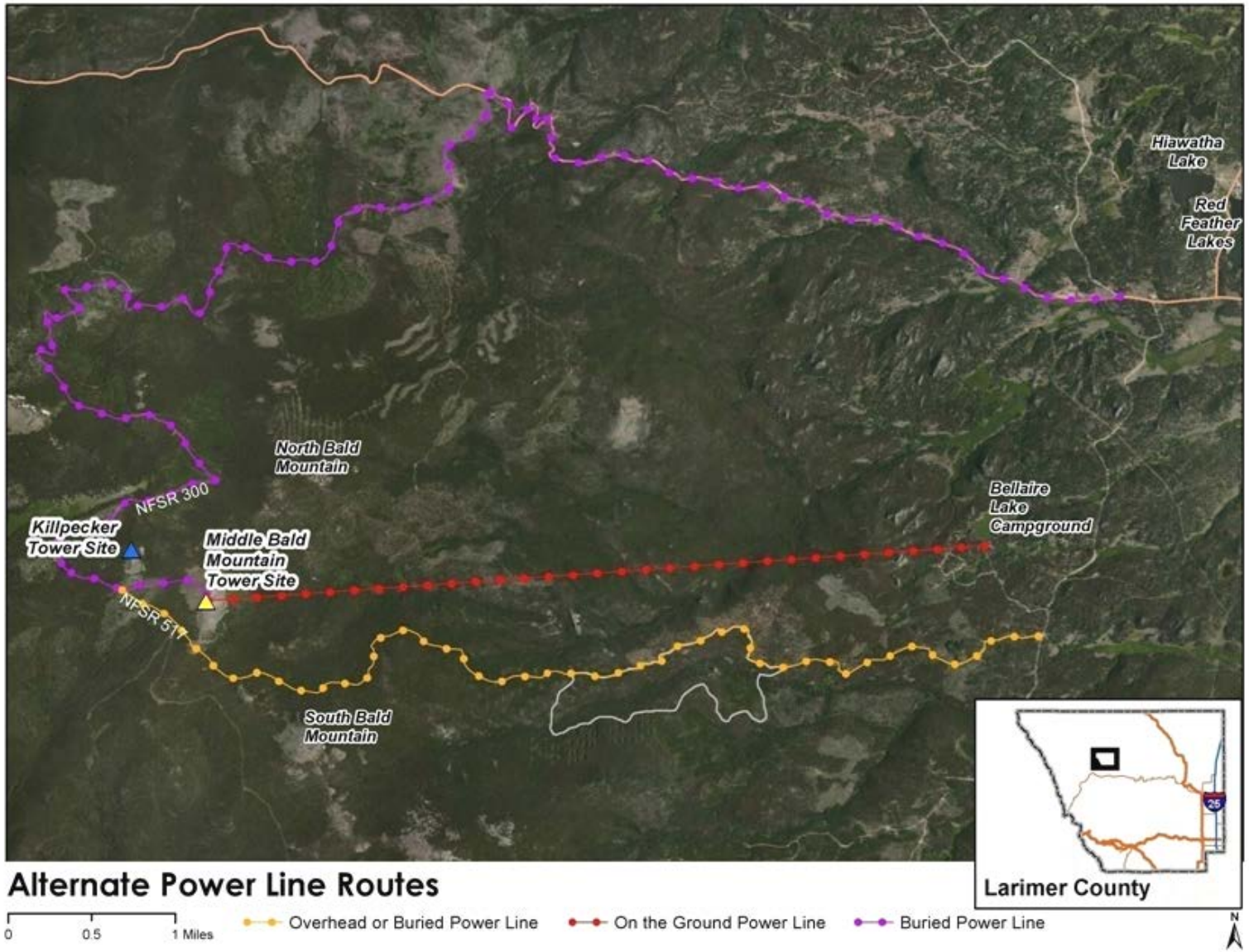
Four options for the power line route were considered.

Option 1 – An overhead power line would be constructed alongside the 4WD portion of NFSR 517 from County Road 162 (**Figure 2-6**). The point of power origination for NFSR 517 would be just south of the entrance to Bellaire Lake. The distance from the existing line tap, along NFSR 517 is 6.6 miles. The overhead power line ROW would be 20 feet wide (10 feet on each side of the power line). Routing the power line along NFSR 517 was ultimately dismissed because it would require blasting to upgrade the road to a maintenance level suitable for construction traffic, creating considerable physical disturbance, tree removal, and elimination of a popular 4WD recreation opportunity.

Option 2 – Similar to Option 1, but the power line would be buried in the shoulder or borrow pit of the 4WD section of NFSR 517 (**Figure 2-6**). The buried power line would require a 12-foot ROW. A staging area at each end of NFSR 517 would be needed during construction of the buried power line, as well as a temporary 20-foot construction easement along the power line route. The power cable would be buried at a minimum depth of four feet. Trenching along NFSR 517 would require considerable improvements to the 4WD road for construction access as well as significant blasting for the cable trench given the amount of rocky ground that would be traversed by the line. This option was dismissed due to the amount of ground disturbance resulting from underground construction in this setting and associated effects on the 4WD experience due to required improvements to the road for construction access.

Option 3 – Options were considered that would underground the power line along all (or portions of) an alignment that followed the Deadman Road, NFSR 300, and NFSR 517, either in the middle of the road or in the road shoulders. Whether buried in the shoulder of the road or buried in the center of the road, underground construction along the Deadman Road would have adverse effects on historic Civilian Conservation Corps culverts located along the road and would also involve substantial ground disturbance similar to what was described for Option 2. Construction would require blasting, substantial interruption of traffic flows; maintenance and repairs could require periodic digging to the buried line, interrupting traffic flows. Burying the line would also require visible above-ground installation of approximately 3’ x 5’x 3’ junction boxes next to the road every 900’ to ¼ mile, or approximately 65 – 70 boxes. For these reasons, this option was eliminated from further consideration.

Figure 2-6 Alternate Power Distribution Line Route Options



Option 4 – In addition to conventional overhead and underground construction, an on-the-ground cable option was also considered. The route assessed for cable installation was from the Bellaire Campground area, staying north of Lone Pine Creek, crossing the North Lone Pine Trail and traversing up the east face of Middle Bald Mountain. The on-the-ground power cable option was dismissed because it did not meet national electric safety code standards for this application (Copeman 2007).

2.7.3.2 Renewable Energy Options

Given a need for 200 amp service (AC) to power the site, a solar or wind power facility at the site would need to have about 35Kw of generating capacity. Either renewable energy option would require a large battery array (potentially at least doubling the size of the building) or a back-up generator to support operations when adequate wind or solar energy power production and storage was not available. A hybrid system was also considered (see below).

Solar

A solar power system would need to be ground-mounted on a permanent foundation and support structure capable of withstanding 100 mile per hour winds (Hinsdale County, no date). Two ground-mounted support structures approximately 70 feet long by 18 feet wide by 20 feet tall would be needed, with each support structure containing a total of 180 panels divided into nine sections, each consisting of 20 individual panels. An illustration of a solar array used to power a similar communications site is presented as **Figure 2-7**. Although an onsite solar array could eliminate the need for an above-ground power line and its associated impacts, it would have impacts of its own. The building would be at least doubled in size to house the required number of storage batteries. The additional large (20'x140' or larger) panel array footprint would increase visibility, visual, and recreation effects, as well as increase impacts to vegetation and soils and susceptibility to vandalism.

Figure 2-7 Example of a Solar Array for a Communication Site

At the Killpecker site, the old growth trees in an approximately 60' x 200' area would need to be removed for a 20' x 140' solar array. The cleared area would be much larger than the array itself so surrounding trees would not shade the array during any part of the day. The large clearing and array would then be visible from the roads, increasing the visual effects of the Killpecker site. There would be associated effects to vegetation, soils, and increased susceptibility to vandalism, as well as the building needing to be at least doubled in size to house the required number of storage batteries.

Wind

The possibility of powering the communication site using propeller-style wind turbines or vertical axis turbines was considered. The propeller-style wind turbines would need to be at least 35 feet tall at the hub. A vertical axis wind turbine was also investigated. These turbines had a maximum output of 25Kw, and therefore two 34-foot tall by 34-foot wide turbines would be needed to meet the required generating capacity of 35Kw (Rasmussen 2007). There is relatively little wind resource in Colorado during the summer months, and both the propeller-style and vertical axis turbines were recommended to be used in combination with other power generation sources as part of a hybrid system (Green 2007, Rasmussen 2007). Wind-only options were therefore dismissed as not being feasible. Hybrid systems are discussed below.

Hybrid

In a hybrid system, the power source does not rely on the sun or wind all the time. Sun or wind both contribute only when the sun is out or when the wind blows, as there are seasonal complementarities of the wind and solar resources. During a period without wind, the power system would have to run off of batteries charged up from the solar panels or wind turbine(s) at a previous time. The battery bank might require a capacity equivalent to many weeks of system operation in order to guarantee that the system was always on-line serving the load, potentially at least doubling the size of the building to accommodate the larger bank of batteries.

The alternative option is to install a back-up generator, fueled with propane or diesel, that would automatically start when the batteries are low and run until the batteries are full, then shut down. With this approach, the battery bank size could be reduced from several weeks of energy storage to a size measured in hours or days. This option would have a smaller building footprint compared to a large battery array but would result in increased noise and emissions from generator operations. Hybrid wind-solar-generator systems for power generation were dismissed due to the recreation and visual impacts near the Middle Bald summit due to the large combined site footprint for a hybrid system that could include footprints for solar array(s), two wind turbine(s), and/or a propane or diesel generator.

2.7.4 Site Designation

In addition to designation of the communication site as Government Only, other site designations were considered. During the scoping process, the Forest Service issued a call for expressions of interest to other electronic communication providers. Other potential site designations for the communication site include:

- *Forest Service Only* (Forest Service use only for two-way radios);
- *Low Power Non-Broadcast* (Forest Service and Government entity use plus cellular, internet service provider, two-way radio, commercial mobile radio (Private Mobile Radio Service), microwave uses, passive reflectors, etc.);
- *Low-Power* (can include all the above uses plus broadcast translators, and low power television or FM radio); or
- *High-Power* (can include all the above uses, plus high power broadcast uses such as AM/FM radio and television).

Several comments were received during scoping expressing public interest in having a cellular provider co-located at the proposed site. During that scoping process, one cellular communication provider expressed interest in co-locating at the proposed new site. Co-location of cellular facilities at the communication site would require a designation of the site as a Low Power Non-Broadcast site. The Forest was unable to get timely response from the company regarding the company's requirements for co-location facility requirements and construction sequencing activities and equipment, so the impacts of those additional or different facilities and construction procedures could not be analyzed in this analysis.

The designations other than Government Only were dismissed from further consideration in this analysis because;

- the current proposal is for more than just Forest Service facilities;
- there is some urgency to provide additional, reliable emergency communications in this area; and
- a Decision to designate this site as Government Only would not preclude cellular (or any of the other types of communication) providers from approaching the Forest in the future with a proposal to co-locate at this site, should it be authorized.

Any future proposal to co-locate a cellular, or other communication provider, would require additional environmental analysis pursuant to NEPA.

2.7.5 Satellite Communication System

Low earth orbit satellite communication systems were considered as an alternative to a land mobile radio system for Larimer County. Satellite coverage can be extremely terrain-limited. There can be a significant amount of signal loss if the person sending or receiving the transmission is located in tunnels, beneath overpasses, around tall buildings, or in rough terrain such as steep-walled canyons. Although this signal loss may be corrected by installing "terrestrial" repeaters on buildings or towers, this would prove to be similar to correcting coverage problems produced by an land mobile radio system. Satellite communications may also be susceptible to interference from other wireless devices. Dispatch operations are not supported on satellite systems, so satellite systems are therefore not practical for public safety communication systems (Ballard 2007). For these reasons, a satellite system was determined to not meet the purpose of and need for action, and this alternative was dismissed from further consideration.

2.8 Past, Present, and Reasonably Foreseeable Future Actions Contributing to Cumulative Effects

This section identifies the past, present, and reasonably foreseeable future actions contributing to cumulative effects in the analysis area.

2.8.1 Past and Present Actions

- Construction and maintenance of Deadman Road, NFSR 300, and NFSR 517.
- Issuance of a public road easement to Larimer County for Deadman Road.
- Land exchange with Crystal Lakes Development Corporation resulting in acquisition of 80 acres of land by the U.S. Government in sections 23 and 24 (T10N, R74W). Mineral rights are reserved to Union Pacific Railroad.
- Right-of-way irrigation ditch easement for the Mitchell Ditch (T10N, R74W, sections 25 and 26).
- Timber sales, salvage logging, timber stand improvement, and hazard tree removal projects as identified in **Table 2-4**.

Table 2-4 Past Timber and Fuels Projects

Project Name	Type	Year
Killpecker No. 1	Timber Sale	1969
Timber Stand Improvement	Timber Stand Improvement	1969
Columbine No. 2	Timber Sale	1969
Roaring No. 2	Timber Sale	1973

Project Name	Type	Year
Miller Dean	Sanitation / Salvage	1973
North Fork	Timber Sale	1974
Deadman Road No. 1	Timber Sale	1976
East Bald No. 2	Timber Sale	1977
James Rex	Sanitation / Salvage	1981
Killpecker Sanitation	Sanitation / Salvage	1983
Hickman	Sanitation / Salvage	1983
Rosecrans	Sanitation / Salvage	1983
Marques	Sanitation / Salvage	1984
Lone Pine	Timber Sale	1985
Deadman Corridor	Timber Stand Improvement	1989
Lone Pine Fuelwood	Sanitation / Salvage	1990
Howling Dog	Sanitation / Salvage	1992
Killpecker	Timber Sale	2002
Crystal Lake No. 1	Thinning Service Contract	2004
Killpecker Trail	Hazard Tree Removal	2010
Deadman Road	Hazard Tree Removal	2011
Pearl Cache	Timber Sale	2012

2.8.2 Reasonably Foreseeable Future Actions

- Future road maintenance activities on Deadman Road, NFSR 300, and NFSR 517.
- Elkhorn Planning Area Treatment Units – implementation of treatments starting in 2014 to include timber sales, stewardship contracts, prescribed fire and Forest Service hand crew work.
- Canyon Lakes 2014 Roadside Hazard Tree Removal (Killpecker Road – NFSR 300).
- Deadman Road annual county road maintenance including imminent hazard tree removal.
- Deadman Road Forest Service roadside hazard tree removal.
- Crystal Lakes hazardous fuels reduction retreatment (treatment of Mountain Pine Beetle mortality in previously treated areas).
- Timber Stand Improvement – pre-commercial thinning in previously clearcut stands of lodgepole pine.

The location of past and future timber and fuel projects in the project vicinity are shown on **Figure 2-8** and **Figure 2-9**. Timber and fuel projects are classified as either clear cuts or partial cuts. Partial cuts include pre-commercial thinning, overstory removal cuts, single-tree or group selection cuts, and shelterwood cuts.

Figure 2-8 Past Timber and Fuels Projects

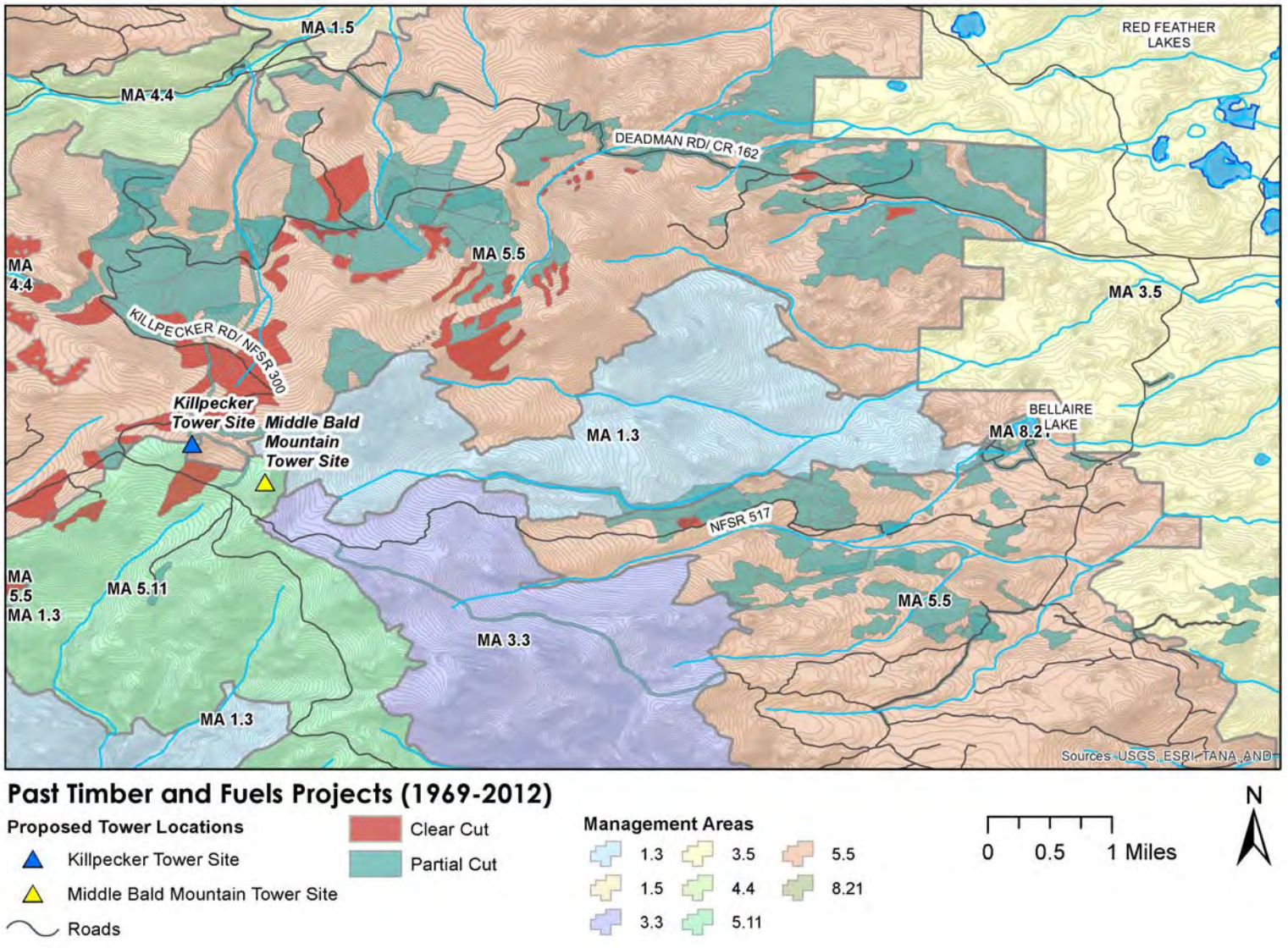
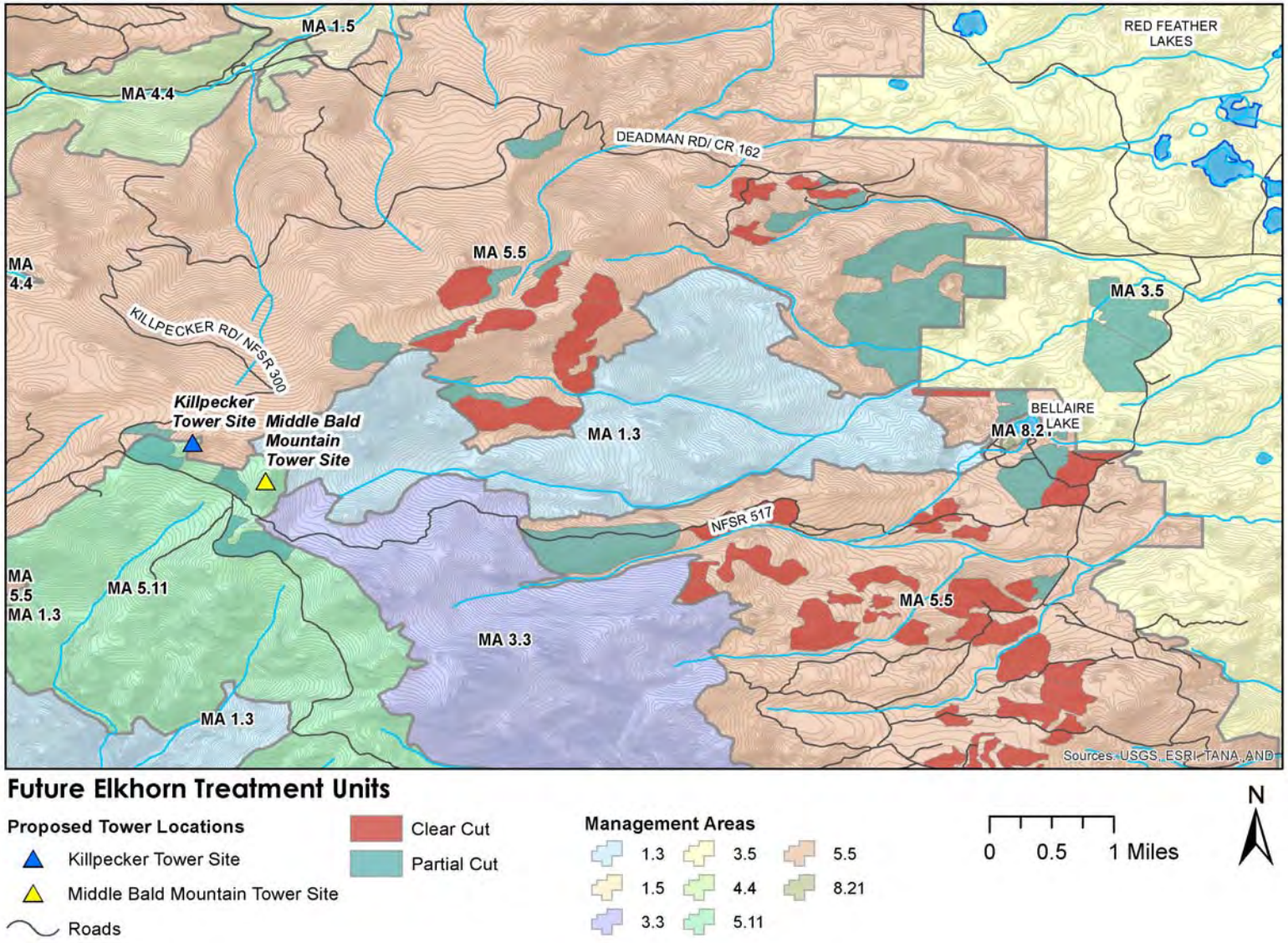


Figure 2-9 Future Elkhorn Treatment Units



2.9 Comparison of Alternatives

The methodology and measurement indicators for each resource are included in the environmental consequences analysis section in Chapter 3.

Table 2-5 Measurement Indicators Effects for Issues by Alternative

Measurement Indicators for Issues	Proposed Action (Middle Bald Mt. Site)	Preferred Alternative (Killpecker Site)	No Action
Issue: Visual Resources and Aesthetics			
Existing SIO	Low	High	—
Resulting SIO	Very low	Low	—
Visibility from KOPs			
KOP 1	Minor adverse	Negligible to Minor adverse	None
KOP 2	Minor adverse	Minor adverse	None
KOP 3	Significant adverse	None	None
KOP 4	Significant adverse	Minor to Moderate adverse	None
Issue: Recreational Experience			
Consistent with ROS class	Yes	Yes	Yes
NFSR “open to all vehicles” impacted by power line construction (miles)	7.8	6.8	0.0
Change in recreational experience (intensity)			
Middle Bald Mountain Summit	Moderate adverse	Minor adverse	None
Killpecker Trail	Moderate adverse	Negligible adverse	None
North Lone Pine Trail	Moderate adverse	Negligible adverse	None
Issue: Vegetation and Wetlands			
Acres of vegetation disturbed	33.6	30.8	0
Acres of old-growth trees potentially impacted	5	2.5	0
Potential loss of rare plants identified in the analysis area	0	0	0
Acres of grass-herb community on Middle Bald Mountain	.5	0	0
Wetlands	0 with adherence to design criteria	0	0
Issue: T&E Wildlife, FSS, and MIS			

Measurement Indicators for Issues	Proposed Action (Middle Bald Mt. Site)	Preferred Alternative (Killpecker Site)	No Action
Threatened and Endangered Species			
Canada Lynx	[1]NLAA	NLAA	None
North American Wolverine	None	None	None
Forest Service Sensitive Species			
Gray Wolf	None	None	None
American Martin	[2]MI	MI	None
Pygmy Shrew	MI	MI	None
Fringed Myotis	MI	MI	None
Townsend's Big-Eared Bat	None	None	None
Hoary Bat	MI	MI	None
Northern Goshawk	MI	MI	None
Flammulated Owl	MI	MI	None
Boreal Owl	MI	MI	None
Lewis' Woodpecker	None	None	None
Olive-Sided Flycatcher	MI	MI	None
White-Tailed Ptarmigan	None	None	None
Boreal Toad	None	None	None
Northern Leopard Frog	MI	MI	None
Issue: Cultural Resources			
Number of sites adversely effected that are listed or eligible for listing on the NRHP	None direct with adherence to design criteria	None	None
Number of sites adversely effected that "needs data" to determine NRHP eligibility	1	0	0
Issue: Erosion, Runoff, and Stream Sedimentation			
Acres of soils disturbed	31.1	28.2	0
Acres of sensitive soils disturbed*	15.5 with design criteria & BMPs	15.5	0
Acres of sensitive meadow	1.3	0	0
Potential for Runoff & Stream sedimentation	Low with design criteria & BMPs	Low	None

[1]NLAA = May affect, but not likely to adversely affect.

[2]MI = May impact but not likely contribute toward federal listing or loss of viability to the species.

* Sensitive soils include water erodible, compaction prone, and limited reclamation potential

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Middle Bald Mountain Area Communication Site
Draft Environmental Impact Statement
Larimer County, CO

Chapter 3.0 Affected Environment and Environmental Consequences

3.0 Affected Environment and Environmental Consequences

3.1 Introduction

3.1.1 Impact Thresholds

3.1.1.1 Impact Type

Impact type classifies the effect as direct, indirect, or cumulative, and then determines whether the effect would result in beneficial or adverse effects.

Direct: Effect caused by the alternative and occurs in the same time and place (e.g., removal of vegetation, use of machinery, etc.).

Indirect: Effect caused by the alternative is later in time or farther removed in distance, but is still reasonably foreseeable (e.g., increased development in the area, accelerated erosion).

Cumulative: Incremental effect caused by the alternative when added to other past, present, and reasonably foreseeable future actions (e.g., combined effect of project and other non-project actions).

3.1.1.2 Impact Duration

Describes the length of time an effect would occur as short- or long-term.

Short-term: Lasting no longer than the immediate 1- to 5-year period.

Long-term: Lasting beyond 5 years; typically extending beyond a decade or indefinitely.

3.1.1.3 Impact Intensity

Intensity describes the degree, level, or significance of an effect as no effect, negligible, minor, moderate, or significant.

No effect: No discernible effect.

Negligible: Effect is at the lowest level of detection and causes very little or no disturbance or improvement.

Minor: Effect that is slight but detectable, with some perceptible effects of disturbance or improvement.

Moderate: Effect is readily apparent and has measurable effects of disturbance or improvement.

Significant: Effect is readily apparent and has measurable effects of disturbance or improvement that are of local or regional importance; or sets a precedent for future project undertakings by federal agencies. The significance criteria or threshold is determined on an individual resource basis; significance criteria are provided in each resource section.

For most resources, a broad analysis area was defined to provide context and to encompass the overall area within which environmental effects could be expected to occur. Typically, the analysis area extends from the Killpecker and Middle Bald Mountain tower sites east to the Red Feather Lakes vicinity, an area approximately 8.5 miles in width. The analysis area has a north-south dimension of approximately 5 miles. Within the overall analysis area, a smaller, detailed analysis area was defined for some resources to focus on site specific disturbance. This more detailed area varies by resource and is defined in the resource discussions that follow, as applicable.

3.2 Cultural Resources

3.2.1 Issues

- Impacts to the integrity of cultural resources, including those eligible for listing on the National Register of Historic Places (NRHP), from construction, operation, and maintenance of the proposed communication site.

3.2.2 Affected Environment

A Class I literature review, conducted on September 17, 2012 and October 2, 2013, included a search of site forms and GIS data on file at History Colorado's Office of Archaeology and Historic Preservation and on the online Compass database; review of General Land Office maps; and consultation of state and regional overviews.

For purposes of the literature review, an analysis area was defined to include an area within one mile of project facilities. Based on the file search, six sites—five historic and one prehistoric—were found within the analysis area. Ten previous inventories were performed within the one-mile buffer; two of which intersect the analysis area. These include inventories completed by Alpine in 2012 for the Roadside Hazard Tree Areas (project (Reed et al. 2012) and by the Forest Service in 2006 (Frederick and Struthers 2010). Any portion of the analysis area that was previously inventoried during these two inventories was excluded from inventory for the current project, with the approval of the Forest Service archaeologist. Three historic sites recorded during the Roadside Hazard Tree Areas inventory and a historic road recorded during the Forest Service 2006 inventory fall within the analysis area.

The four previously recorded sites are within recently inventoried areas and include Deadman Road (5LR11364), a segment of Old Deadman Road (5LR11364.3), a historic prospecting site (5LR13110), and a historic artifact scatter (5LR13111). Both the segment and entire length of Old Deadman Road are recommended as eligible to the NRHP and should be avoided by project ground-disturbing activities. The prospecting pit site (5LR13110) and the artifact scatter (5LR13111) are recommended as not eligible to the NRHP and no further archaeological work is necessary.

In addition to the four previously recorded sites, one newly recorded cultural resource was identified near the summit of Middle Bald Mountain. The site is a collection of rock features recommended as "needs data" for the NRHP because the period of significance for the site is tenuous. Avoidance of the site is recommended until an NRHP-determination can be made. No sites were identified at the Killpecker site.

Brief descriptions of the recorded sites are provided below. Because of the sensitive nature of cultural resources, the Technical Report for the project is on file with the Forest Service and will only be summarized herein.

3.2.2.1 Recorded Sites

5LR11364 – Deadman Road

Site 5LR11364 consists of the entire and current alignment of Deadman Road (County Road 162). The road is a well-maintained and continually used gravel road, originally constructed in 1890 largely to serve the early timber and mining industry. The road was upgraded with portions of it realigned in 1936 by the Civilian Conservation Corps. The road was completed in 1942 along with 176 water control features and 6 bridges. The majority of the water control features are well-constructed masonry culverts made of shaped local granite. The bridges are also formal masonry structures, although two of the bridges were partially reconstructed using concrete.

5LR11364.3 – Old Deadman Road

Site 5LR11364.3 is a historic, abandoned segment of the original Deadman Road (5LR11364). The recorded segment measures 1,765 feet in length and is an average of 8 feet wide. The modern road closely follows the trajectory of the recorded segment. All that remains visible of the construction style of the recorded road segment is a level grade excavated into the gentle hillside and some rounded gravels and pebbles that once constituted the road's fill.

5LR13190 – Rock Feature Site

Site 5LR13190 is a rock feature site of unknown cultural affiliation below the rocky peak of Middle Bald Mountain. The site consists of three rock features and nine rock cairns. The cairns resemble what Benedict (1985) identifies as single rock and loosely piled rock stack cairns forming a U-shape game drive system. Although prehistoric hunting features represent a site type that is still poorly represented in Colorado, James Benedict has done considerable work on high altitude, game drive systems documenting numerous hunting blind features in Boulder, Grand, and Larimer counties. In particular, his work on Arapaho Pass and near Estes Park are both in relatively close proximity to the analysis area. As they are constructed, the rock features are similar to other rock features interpreted as hunting blinds. The features are all rudimentarily constructed using local stone with the interior space on the upslope side of the feature. The nine rock cairns identified are all of simple construction and when the spatial association is considered, may form drive lines.

Aside from defining game-drive models, Benedict's work was instrumental in developing relative dating techniques for hunting features in his study areas through the application of lichenomentry. Based on examination of lichen growth on rock surfaces and lack of soil accumulation at the base of rock walls or around rock cairns, the site appears to represent recently constructed rock features that could have been constructed as hunting shields by contemporary hunters. The potential for recent hunting activity is also evidenced by the presence of a modern archery arrow and a modern camp fire ring found northeast of one of the rock features. However, it is still possible that the recent construction of the features may have been built on existing prehistoric feature foundations. Considering that the period of significance for the recorded features cannot be determined through the recording process, site 5LR13190 is evaluated as "needs data."

5LR13110 – Prospecting Site

Site 5LR13110 is a small historic prospecting site, consisting of two prospecting pits. Both pits were excavated at the same elevation on the hillside that is associated with the construction, maintenance, and use of Deadman Road. It is possible that disturbances associated with the road construction and maintenance have obliterated portions of the site. No artifacts were observed on the site's surface. No soil deposition currently occurs in the area, and the impossibility of the existence of a subsurface component can be established without excavation of any probes.

5LR13111 – Historic Artifact Scatter

Site 5LR13111 is a historic artifact scatter. Site 5LR13111 is a discrete concentration of 43 historic cans. No cultural features or structures were observed at the site. A shovel test excavated within the concentration confirmed the materials are confined to the modern ground surface and first 5 cm of duff layer. Based on the can styles, the date of the site is between 1904 and 1914.

3.2.3 Environmental Consequences

3.2.3.1 Methodology

The purpose of the Class III cultural resource inventory is to: (1) identify and record all visible cultural resources within the analysis area, including previously recorded cultural resources; (2) evaluate the significance of the cultural resources and make recommendations regarding their NRHP eligibility; (3)

assess the potential impact of the project on significant cultural resources; and (4) identify possible measures to mitigate such impacts.

These objectives were met through review of the existing literature and intensive pedestrian survey of the analysis area. Pedestrian surveys were conducted within a focused analysis area, which included a corridor with a width of 200' along proposed access roads and a block of area within the zone of potential disturbance at the Middle Bald and Killpecker tower sites. For the Middle Bald site, the area surveyed consisted of 35.8 acres. A smaller 2-acre area was surveyed at the Killpecker site due to the smaller footprint of the facilities at this site. Cultural resources found during fieldwork were carefully documented, following the standards established by the Secretary of the Interior for the treatment of cultural properties. As part of the documentation process, sites were evaluated regarding their integrity and potential to yield important scientific information. These evaluations are an important part of the documentation process, because various pieces of historic preservation legislation establish site significance as the critical factor in the management of cultural resources. The most notable among these pieces of legislation is the NHPA of 1966 (as amended).

Significant cultural resources are defined as those listed on, or eligible for listing on, the NRHP. Significant cultural resources are generally at least 50 years old and meet one or more of the criteria presented in 36 CFR Part 60, which specifies that the quality of significance in American history, architecture, archaeology and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials workmanship, feeling and association, and: (a) are associated with events that have made a significant contribution to the broad patterns of our history; or (b) are associated with the lives of persons significant in our past; or (c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) have yielded, or may be likely to yield, information important in prehistory or history.

Two of the sites identified in the analysis area [the prospecting pit site (5LR13110) and the artifact scatter (5LR13111)] are recommended as not eligible to the NRHP, and are not considered significant. Recorded sites that are either eligible for listing on the NRHP or that are recommended as “needs data” for an NRHP eligibility determination, are summarized in **Table 3-1** and discussed further in Sections 3.2.2.3 through 3.2.2.5.

Table 3-1 Recorded Sites Carried Forward for Analysis

Site No.	Site Type	NRHP Eligibility Determination
5LR11364	Deadman Road	Officially Eligible Roadbed Non-contributing Culverts Contribute
5LR11364.3	Old Deadman Road	Officially Eligible
5LR13190	Rock Features	Needs Data

3.2.3.2 Measurement Indicators

- Number of recorded cultural sites that would be adversely effected that are either listed or eligible for listing on the NRHP.
- Number of recorded cultural sites evaluated as "needs data" to determine eligibility for listing on the NRHP.

3.2.3.3 Significance Criteria

Impacts to cultural resources that are caused directly or indirectly by project activities would be significant only if they occur to a cultural resource that is considered eligible for or is listed on the NRHP. Sites with an eligibility determination of "needs data" should be treated as a significant resource until such time that the NRHP eligibility can be assessed.

3.2.3.4 No Action Alternative

Under the No Action Alternative there would be no direct or indirect impacts from construction of a power distribution line, communication site, or new access roads. Maintenance of Deadman Road would continue consistent with current practices. No effects to cultural resources would be anticipated.

3.2.3.5 Proposed Action – Middle Bald Mountain Site

Direct impacts to cultural resources may occur during construction from ground-disturbing activities such as grading, excavation, or earth moving for construction of the power distribution line, communication site, and new access road. Direct impacts to cultural resources during operation of the communication site may result from ground-disturbing activities for road and ROW maintenance, and from maintenance access between the end of the permanent access road and the communication site. Indirect impacts such as vandalism and artifact collection from the surface of sites may result if new roads open previously inaccessible areas to the general public.

The proposed power line would be constructed along Deadman Road from its intersection with Red Feather Lakes Road to its intersection with NFSR 300. The travel corridor of Deadman Road itself is not considered a contributing element of the historic property, and therefore will not be adversely effected by use and maintenance of that road. Numerous water control features along Deadman Road are considered important (contributing) elements of the historic resource. These culverts could be adversely affected by construction of the power distribution line along Deadman Road, if they are not avoided. As planned, ground-disturbing activities associated with the construction of the project's overhead power line along Deadman Road would avoid these features; therefore the Deadman Road site should suffer No Adverse Effect from the Proposed Action.

Old Deadman Road falls within the project corridor and could be impacted by the placement of the wood poles for the power line. Wood poles would be placed on the south side of Deadman Road where the recorded segment of the Old Deadman Road parallels the Deadman Road, to avoid impacts to this site. As planned, ground-disturbing activities associated with the construction of the project's overhead power line along Deadman Road would avoid Old Deadman Road. Therefore the Old Deadman Road site should suffer No Adverse Effect from the Proposed Action.

The underground portion of the power distribution line and temporary construction access to the communication site could impact a historic property consisting of rock features and cairns (Site 5LR13190). The site consists only of surface features, with no evidence of buried deposits. Impacts to any of the features of this site would be considered an adverse effect. The direct adverse effects can be mitigated through implementation of a monitoring program to ensure avoidance of the features. As planned, the temporary access and buried power line narrowly avoid the important features of the site and will cause no direct impact to it. Although designating no permanent access and matting the construction access in this portion of the site avoids direct physical impacts, the surficial nature of the site results in a very high risk for indirect or inadvertent impacts in the future. Future foot and winter traffic, regardless of personnel training, has a high probability of impacting the features over the life of the project. If this site is selected a mitigation plan would be developed in consultation with the Forest Service and the State Historic Preservation Office to mitigate long-term adverse effects. Therefore, the site should suffer No Adverse Effect from the Proposed Action.

3.2.3.6 Preferred Alternative – Killpecker Site

Impacts to Deadman Road (5LR11364) and Old Deadman Road (5LR11364.3) would be as described for the Proposed Action. The Preferred Alternative would not construct a communication site at Middle Bald Mountain, so there would be no direct or indirect impacts to Site 5LR13190. Therefore, the Preferred Alternative would result in No Adverse Effect to historic properties.

3.2.3.7 Comparison of Alternatives

The Preferred Alternative would have a similar but lower level of impacts than the Proposed Action. Both alternatives include construction of a power distribution line along Deadman road in proximity to two recorded sites that are officially eligible for NRHP. However, no disturbance to these sites is anticipated. The Preferred Alternative would not affect a site located on Middle Bald Mountain, which consists of rock features that is evaluated as "needs data". Although no direct disturbance to this site would result from the Proposed Action, increased foot traffic resulting from project construction and operation would increase the risk of disturbance to this site.

3.2.3.8 Cumulative Effects

The road system in the project vicinity is well established, and is, in fact, historic in nature. These travel corridors will continue to be maintained and used regardless of the project. Use of these roads, for administrative uses and public access will continue with or without the project.

3.3 Recreation

3.3.1 Issues

- Impacts to motorized and non-motorized recreational experiences and in the surrounding area (including to four-wheel and ATV driving, hiking, horseback riding, etc.) from the two alternative communication sites, and the proposed power distribution line alongside roads leading to the site and across the meadow at the summit.

3.3.2 Affected Environment

The Canyon Lakes Ranger District of the Roosevelt National Forest encompasses approximately 650,000 acres, mostly in Larimer County, offering visitors a variety of recreation opportunities including day hiking, horse riding, mountain biking, campground and dispersed camping, fishing, and off-highway vehicle (OHV) riding on four-wheel drive roads and trails. The analysis area for recreation included the 8.5 mile by 5 mile area described at the beginning of this chapter.

NFSRs in the project vicinity, including NFSR 300 (Killpecker Road) and NFSR 517 (Bald Mountain Road), are designated as roads open to all vehicles, with seasonal restrictions. NFSR 300 is open from June 15 to November 30 along the entire route. NFSR 517 is open from June 15 to November 20 between mileposts 4.20 and 13.38, which includes the section of road within the analysis area for the Middle Bald Mountain communication site. Dispersed camping is permitted within 300 feet of most NFSRs in the project vicinity. NFSRs 300 and 517 are popular roads for OHV recreation, and NFSR 517 has been adopted by the Horsetooth 4 Wheelers.

The Killpecker Trail (956) can be accessed from NFSR 517, NFSR 300, and from Deadman Road, where there is a small motorized trailhead with capacity for three vehicles (and no trailer parking). The trail is approximately 4 miles in length, with the southern end traversing along the edge of the trees below the summit of Middle Bald Mountain before it reaches NFSR 517. Permitted uses include hiking, backpacking, horse riding, mountain biking, and OHV use by registered motorcycles and dirt bikes. Overall use is light. The difficulty level for hiking and single-track riding is moderate.

The North Lone Pine Trail (953) extends between NFSR 517 and Deadman Road, skirting to the east side of Middle Bald Mountain. The trailhead is located on Deadman Road and has capacity for approximately five vehicles. The difficulty level of the trail is moderate. Use of the trail for horse riding, mountain biking, day hiking, and backpacking is light.

Although there isn't a developed trail to the top of Middle Bald Mountain, dispersed uses occur on because the summit offers dramatic, 360 degree views of the surrounding peaks and plains into Wyoming, Kansas and central Colorado. Adding to its appeal is the fact that the summit can be reached with a short hike off the Killpecker Trail from NFSR 517.

There are no developed trails on the unnamed ridge where the Killpecker site is located. Trees block visibility from the Killpecker site to the Killpecker trail and vice versa. A portion of the Killpecker trail is visible from the Middle Bald Mountain site. There are no other uses at the Killpecker site other than dispersed hunting.

Opportunities for campground camping are located at Bellaire Lake Campground, east of Middle Bald Mountain off County Road 69, and at the North Fork Poudre Campground located north of Middle Bald Mountain along the Deadman Road. Facilities provided at the Bellaire Lake Campground include restrooms and drinking water near each restroom. Each site contains a tent pad, fire grate, and picnic table. Single sites, double sites and triple sites are available. Electrical hookups are available at some sites. The North Fork campground is much smaller at 9 sites and has limited facilities.

Fishing is available at multiple locations, including Bellaire Lake and nearby Dowdy and West Lakes as well as some of the smaller streams in the analysis area.

Recreation Opportunity Spectrum (ROS). Deadman Road, NFSR 300, and the proposed Killpecker site are located in areas with a ROS class of Roaded Natural (**Figure 3-1**). The Roaded Natural ROS is described as providing: an opportunity to be with other users in developed sites; little challenge or risk; a mostly natural environment as viewed from roads and trails; moderate concentration of users at campsites; some obvious user control; access and travel is standard motorized vehicles; vegetation alterations for recreation and visual objectives.

The Middle Bald Mountain site and a short quarter-mile stretch of NFSR 517 are in the Roaded Modified ROS (**Figure 3-1**). The Roaded Modified ROS is described as providing: opportunity to get away from other users, easy access, little challenge or risk; substantially modified environment (roads, slash, etc.); little evidence of other users except on roads; standard motorized use; and vegetation alteration to enhance the recreation setting. The Roaded Modified ROS gives the recreation user an opportunity for sense of place, wildness, and isolation.

The Swamp Creek Trail and the upper portion of NFSR 517 are located in the Semi-Primitive Motorized ROS, which provides a moderate probability of solitude, a high degree of challenge and risk using motorized equipment, and a setting that is predominantly natural appearing.

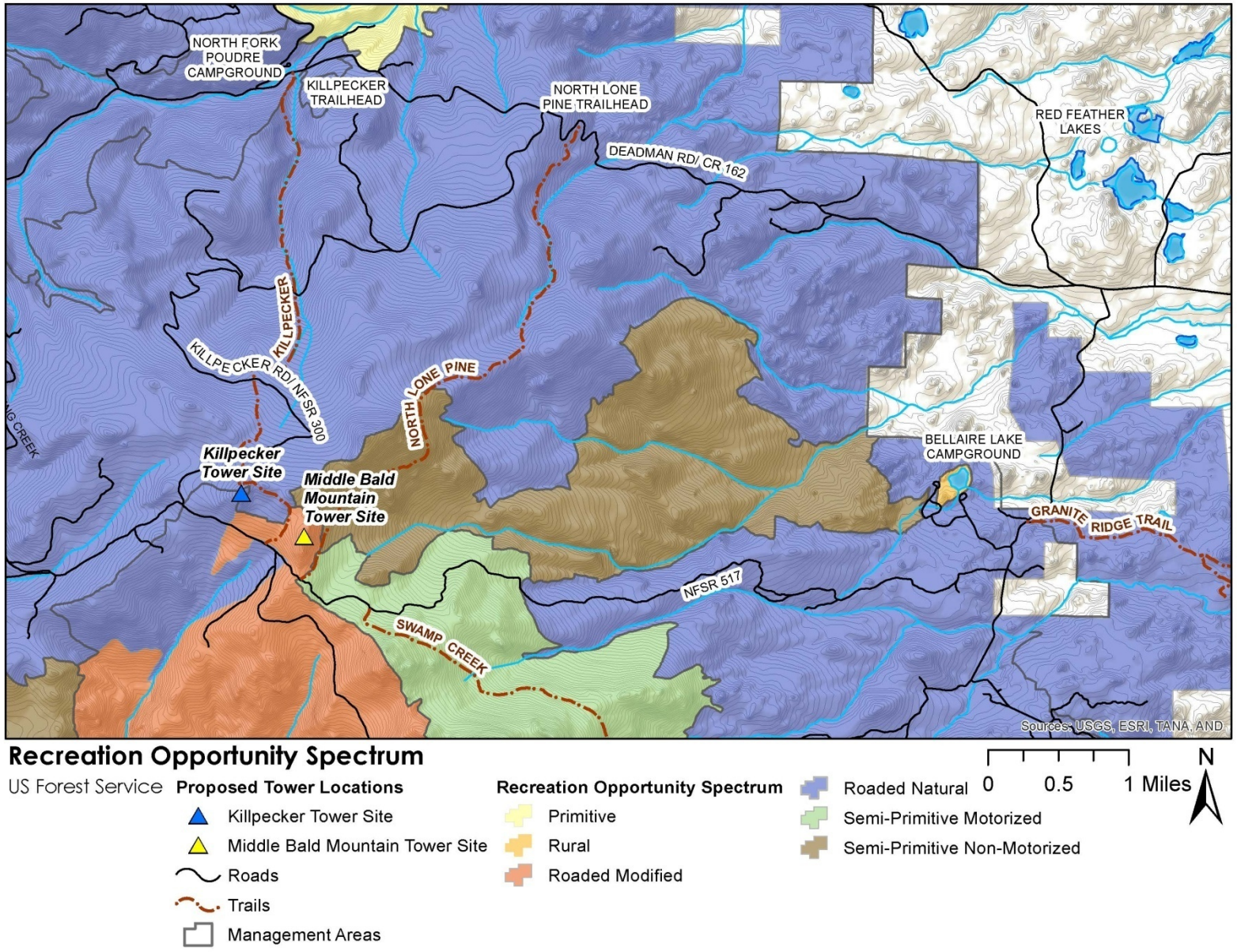
The upper portion of the North Lone Pine Trail is located in the Semi-Primitive Non-Motorized ROS, which offers a high probability of solitude, closeness to nature and a natural appearing environment.

3.3.3 Environmental Consequences

3.3.3.1 Methodology

Potential direct and indirect effects to recreation were assessed by examining potential changes in recreational access, opportunities, and experiences that would result from implementation of the alternatives. Consistency with current ROS classification(s) on NFS lands is also assessed.

Figure 3-1 Recreation Opportunity Spectrum



3.3.3.2 Measurement Indicators

- Consistency with established ROS classes.
- Miles of NFSR classified as "open to all vehicles" to be impacted by power distribution line construction.
- Changes in recreational experiences at the summit of Middle Bald Mountain and on trails open to horse riding, hiking, mountain biking, and motorcycle riding.

3.3.3.3 Significance Criteria

A significant impact on recreation would result if any of the following were to result from implementation of the alternatives:

- Permanent loss of access to, or displacement from, a recreation site/area of local or regional importance.
- Degradation of the recreational setting of a recreation site/area of local or regional importance, to the extent that it no longer supports established recreational uses.
- Conflict with formally established recreation uses/opportunities (e.g., ROS class or limit/restrict a specific type of allowable activity or use at the site/area).

3.3.3.4 No Action Alternative

Under the no action alternative, the Forest Service would not authorize Larimer County to construct and operate a communication site at either the Middle Bald Mountain site or the Killpecker site, and there would be no direct or indirect effects to recreation or recreation experience (sense of place, wildness, isolation) in the short- or long-term.

3.3.3.5 Proposed Action – Middle Bald Mountain Site

Under the proposed action, the Forest Service would authorize Larimer County to construct and operate a radio communications facility near the summit of Middle Bald Mountain. The Killpecker Trail ascends to the meadow on the west slope of Middle Bald Mountain from NFSR 517, and traverses the analysis area along the edge of the trees below the summit. The summit of Middle Bald Mountain, located a short distance from the trail across open meadow and rock talus, affords 360-degree views of the surrounding states, mountains and plains. The hike from NSFR 517 is relatively short (approximately 0.25 mile) making this a relatively accessible destination for day hiking.

Construction activities would result in short-term direct impacts to the recreation setting from noise, visual disturbances, and construction traffic along NFSR 300, NFSR 517, along portions of the Killpecker Trail, and near the summit of Middle Bald Mountain. Recreational use of the summit area would be temporarily displaced during construction of the tower, equipment building, underground section of power distribution line, and the access road. Construction traffic could delay access to the North Lone Pine Trail from NFSR 517 and construction noise may be audible along the southern end of the trail during construction; however, use of the trail would not be displaced and visual disturbances would not be evident.

Short-term impacts to the recreation setting during construction would be readily apparent and cause temporary displacement of recreational uses over a single summer season. Long-term impacts to the recreational setting would be readily apparent and moderately adverse along the alignment for the overhead power distribution line and significantly adverse near the summit; however, recreational uses would not be permanently displaced. A substantially modified environment is consistent with the Roaded Modified ROS and authorization of the communication site at Middle Bald Mountain would not conflict with the designated ROS class in the vicinity of the summit. The power line alignment crosses areas with a ROS classification of Roaded Modified or Roaded Natural. The Roaded Natural ROS provides for

a "mostly natural environment as viewed from roads and trails." Construction of the power distribution line on single wood poles would not conflict with ROS classes along the alignment. Overall, both short- and long-term impacts to recreation and recreation setting from the proposed action would be significant in intensity on Middle Bald Mountain, moderate along roads.

Long-term direct impacts include significant permanent modification to the scenic views and sense of isolation on the summit of Middle Bald Mountain due to construction of the communication tower, building, and access road, all of which would be visible from the Killpecker Trail and the slope ascending to the summit of Middle Bald Mountain. Camouflaging the building and terminating the access road at the edge of the trees below the summit would only minimally reduce those long-term impacts. The recreational setting along 7.8 miles of roads designated as open to all vehicles would be moderately adversely affected by installation of an overhead power line and vegetation clearing within the power distribution line ROW. Long-term indirect effects include an increased risk that unauthorized user-created OHV routes would become established off the new access road. The access road would be gated to reduce the likelihood of this occurring.

3.3.3.6 Preferred Alternative – Killpecker Site

Under the preferred alternative, the Forest Service would authorize Larimer County to construct and operate a radio communications facility at the Killpecker site. The Killpecker Trail ascends to the meadow on the west slope of Middle Bald Mountain from NFSR 517, and traverses west along a ridge to within approximately 330 feet of the Killpecker site, before turning north to intersect with NFSR 300 (**Figure 3-1**). The communication facility (tower, building, and generator) would not be visible from the Killpecker Trail due to extensive forest cover in the project vicinity and fact that the trail is down slope of the Killpecker site over much of its distance between NFSR 517 and NFSR 300. The tower at the Killpecker Site would be visible from the summit of Middle Bald Mountain and from the meadow just below the summit of the Western slope of Middle Bald Mountain (refer to Section 3.4, Visual Resources for additional information).

Construction activities would result in short-term direct impacts to the recreation setting from noise, visual disturbances, and construction traffic along NFSR 300. Construction traffic could delay access to the Killpecker Trail from NFSR 300 and construction noise may be audible along the trail between NFSR 517 and NFSR 300 during construction; however, use of the trail would not be displaced and visual disturbances would not be evident. Construction of the tower would be visible from the summit of Middle Bald Mountain and from the western slope of the mountain, just below the summit. Short-term impacts to the recreation setting during construction would be readily apparent and moderate in intensity.

Long-term direct impacts include permanent modification of scenic views to the northwest from the summit of Middle Bald Mountain due to construction of the communication tower at the Killpecker site. The recreational setting along 6.8 miles of roads designated as open to all vehicles would also be moderately adversely affected by installation of an overhead power distribution line and vegetation clearing within the power line ROW. Changes to the recreation setting would be visible from the summit of Middle Bald Mountain and would be of minor intensity. For recreation users travelling on NFSR 300, impacts would be moderate. Changes to the recreation setting of the Killpecker Trail and North Lone Pine Trail would be negligible.

3.3.3.7 Comparison of Alternatives

Both alternatives would be consistent with established ROS classes. The Preferred Alternative would have a lower level of impacts on recreation and the recreation experience. The primary difference between the two alternatives is the avoidance of significant impacts to the recreational setting on Middle Bald Mountain, including the summit vicinity and Killpecker Trail. Although the top of the tower in the Preferred Alternative would be visible from the Middle Bald Mountain summit area and portions of the Killpecker Trail, visibility and impacts to the setting would be minor compared to the Proposed Action.

The Preferred Alternative would also affect approximately one mile less of NFSR classified as open to all vehicles.

3.3.3.8 Cumulative Effects

Other past, present and reasonably foreseeable future actions in the vicinity of Deadman Road (County Road 162), NFSR 300, and NFSR 517 include ongoing road maintenance, roadside hazard tree removal, and timber and fuels projects as described in Section 2.8. The cumulative effect of past and present road maintenance and timber and fuel projects has been to modify the recreational setting along the power distribution line corridor leading to both the Killpecker and the Middle Bald Mountain sites. Future thinning operations in the vicinity of the Killpecker and Middle Bald Mountain sites, and vegetation clearing for the proposed power line, would add incrementally to the overall cumulative effect of vegetation management and recreational uses along the power line corridor. Overall, cumulative effects to recreation would be moderate for the Proposed Action and minor to negligible for the Preferred Alternative.

3.4 Visual Resources

3.4.1 Issues

- Impacts to the aesthetics and visual aspects of the area (including scenic integrity at the alternative sites and in the viewshed, sense of place, solitude, wildness, etc.) from the location of communication site facilities and the installation of an overhead power distribution line along established and proposed roads from the Red Feather Lakes area to the alternative communication sites.

3.4.2 Affected Environment

3.4.2.1 Analysis Area Overview

The Scenery Management System (SMS), was adopted by the Forest Service in 1995 (Forest Service 1995; the ARP Forest Plan amended 2006). Accordingly, the SMS has been used to evaluate scenic resources for the Middle Bald Mountain Area Communications Site. The SMS system employs a systematic approach for analyzing landscape character, including scenic integrity objectives (SIOs) and landscape visibility. Photographs from key observation points (KOPs) were selected and described for detailed analysis.

The project analysis area is located in the Southern Rocky Mountains Physiographic Province (Fenneman 1946). In addition to the 8.5 mile by 5 mile area described at the beginning of this chapter, the viewshed analysis area extended an additional distance, up to 11 miles east of the communication tower sites.

Project lands fall within the ecological subregion M334 Southern Rocky Mountain Steppe – Open Woodland – Coniferous Forest – Alpine Meadow Province (Bailey 1994). The analysis area is characterized as an aspect-dependent dry continental forest. Precipitation is around 20 inches per year, with approximately 50 percent occurring in the form of snow. Elevations within the analysis area generally range from 8,400 feet near Red Feather Lakes where the power distribution line begins to over 11,000 feet at the summit of Middle Bald Mountain and the un-named ridge to the west where the Killpecker Site would be located.

This area is a mixture of vegetation communities, with dense stands of Engelmann spruce and subalpine fir predominant in higher elevation areas transitioning to more open stands of lodgepole pine in lower areas closer to Red Feather Lakes. Ponderosa pine and Douglas-fir are minor components along the eastern edge of the area and isolated stands of aspen occur where soil moisture levels are favorable.

Overall, the conifers create relatively homogeneous textures throughout much of this landscape. Consequently, landscape visibility is often screened by terrain and trees. Increased vegetation diversity and patterns are created where meadows occur along some minor drainages and at higher elevations.

From higher elevations in the analysis area, particularly the open areas near the summit of Middle Bald Mountain and exposed areas on the high ridge to the west, there are spectacular views toward the towering snow-capped mountain peaks of the Rawah Range and northern portions of Rocky Mountain National Park. Expansive views to the east take in the Red Feather Lakes area and the plains beyond. The Middle Bald Mountain and South Bald Mountain summits are prominent in the foreground. The meadow areas, steep slopes and rock outcrops provide a contrast to the nearly continuous forest cover surrounding the peaks.

Vegetation management has occurred throughout the area for the past 100 years beginning with harvesting for materials for homesteads and ranches. Most of the vegetation in the area is second growth with isolated patches of remnant old growth in some areas. Stumps and other signs of timber harvest are apparent in many areas. Other cultural modifications include a network of forest roads developed for the administration and utilization of NFS lands. In the eastern part of the analysis area, larger acreage rural residential homes, distribution lines and local roadways are visually prominent. Development on private lands of both year-round and seasonal housing and tourism continues to increase. Recreational use is light to moderate during most of the year, except for winter, and increases during the hunting season (see Section 3.3 for a description of recreational uses in the analysis area).

Visual absorption capability, the relative ability of a landscape to accept human alterations without losing scenic quality, ranges from low to high. The steeper slopes and open meadow settings at higher elevations have low visual absorption primarily due to the lack of screening and open character of the landscape. Conversely, many areas have dense forest cover that partially to fully screens alterations and prevents viewers from seeing the ground plane at many locations. Tree regeneration potential is high which can serve to mitigate openings created by disturbance.

3.4.2.2 Scenic Integrity Objectives

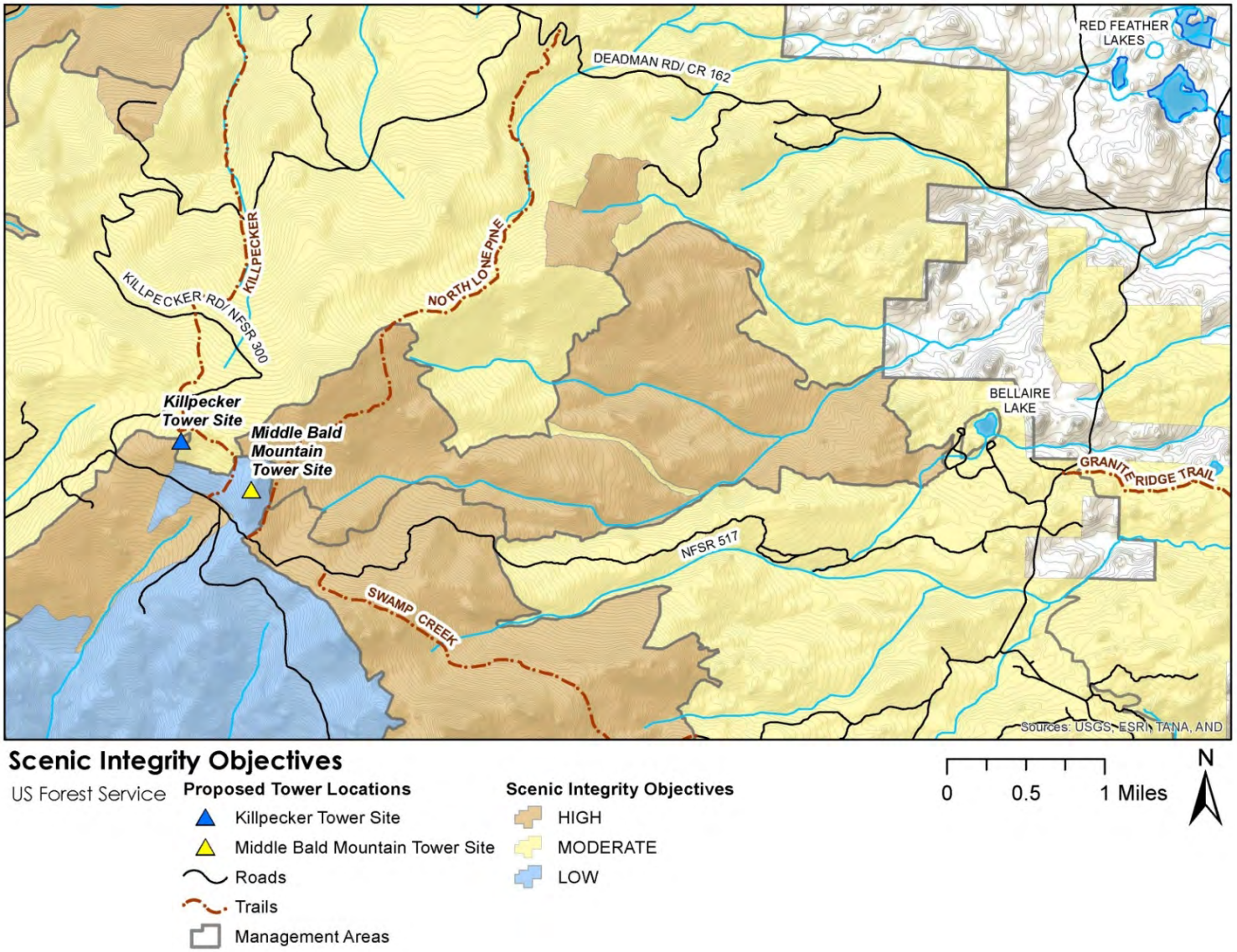
SIOs are a measure of the intactness associated with the visual elements that define a landscape character unit and can range from *Very High* to *Unacceptably Low*. SIOs are long-term objectives that have been determined to have a 20-year threshold (Forest Service 2013). The three SIOs that occur in the analysis area are described below. SIO boundaries are shown on **Figure 3-2**.

- *High* – The valued landscape character 'appears' intact. Deviations may be present but must repeat form, line, color, texture and pattern common to the landscape character so completely and at such scale that they are not evident.
- *Moderate* – The valued landscape character 'appears slightly altered.' Noticeable deviations must remain visually subordinate to the landscape character being viewed.
- *Low* – The valued landscape character 'appears moderately altered.' Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetation type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed, but compatible or complementary to the character within.

3.4.2.3 Landscape Visibility

Landscape visibility is a measure of discernible detail in the landscape, relative to the viewer and their viewing conditions. Landscape visibility is defined by: 1) concern levels of constituents, 2) travel routes and use areas, and 3) distance zones

Figure 3-2 Scenic Integrity Objectives



Concern levels are a measure of the degree of public importance placed on landscapes viewed from travelways and use areas. Constituents evaluated as 'sensitive viewers' have a high degree of concern, activities and attitudes toward scenery and potential changes to landscape character.

Three levels – 1, 2, and 3 – are used to denote the intensity of viewer concern, based on type of use and volume of use, with 1 being the highest level of concern. Input received from field observation, agency and public scoping comments, National Visitor Use Monitoring results, and media coverage was used to determine concern levels. The overall concern level of the analysis area is considered moderate (Level 2), due to a relatively low number of viewers, lack of major travelways and use areas. Some of the most sensitive areas (Level 1) are the residential subdivisions and attractions within the Red Feather Lakes community.

Travel routes and recreation use areas considered sensitive viewing locations for the project that include, among others, local roads, parks, recreational lakes, visitor centers, campgrounds, and hiking trails, as well as lands generally used for dispersed activities such as hunting, photography, wildlife viewing and general solitude experiences. Sensitive viewer locations within the analysis area include recreational trails, use areas such as trail heads and travelways including County Road 74E in the eastern portion of the analysis area, which becomes the Deadman Road when it reaches National Forest System lands. NFSR 300 turns south off the Deadman Road and provides access to the proposed Middle Bald Mountain site and the alternative Killpecker communication sites.

Distance Zones are defined as four categories in the SMS system: Immediate Foreground – 0 to 300 feet; foreground (FG) – 300 feet to 0.5 mile; middleground (MG) – 0.5 mile to 4 miles; and background (BG) – 4 miles to the horizon. Distance zones from the project are identified from each sensitive use area in **Table 3-2** and **Table 3-3**. The project sites are within the foreground viewing distance zone of several of the sensitive use areas.

Table 3-2 Summary of Landscape Visibility from Travelways

Travelway (when viewed by users of the road)	Visibility of Project Sites	Type and Volume of Use	Distance Zone to Project Sites
CR 162/Deadman Road	Low with most views from Red Feather Lakes	Primary travelway – moderate use	MG/BG
NFSR 300	Not visible due to terrain and forest screening	Secondary travelway – moderate to low use	FG/MG
NFSR 517	Low due to terrain and forest screening	Secondary travelway – moderate to low use	FG/BG
Highway 14	Not visible except near Joe Wright Reservoir at 15 miles distance	Primary travelway – high use	BG

Table 3-3 Summary of Landscape Visibility from Recreation Areas

Recreation Area (when viewed by recreation user)	Visibility of Project Sites	Type and Volume of Use	Distance Zone to Project Sites
Killpecker Trailhead	Low due to forest screening	Low use	MG

Recreation Area (when viewed by recreation user)	Visibility of Project Sites	Type and Volume of Use	Distance Zone to Project Sites
Killpecker Trail	High in open meadows; not visible in forested areas	Low use	FG/MG
North Lone Pine Trailhead	Low due to forest screening	Low use	MG
North Lone Pine Trail	High in open meadows; not visible in forested areas	Low use	FG/MG
Swamp Creek Cutoff Trail	High in open meadows; not visible in forested areas	Low use	FG/MG
North Fork Poudre Campground	Not visible	Moderate use	MG
West Lake Recreation Area	Moderate visibility	Heavy use	BG
Dowdy Lake Recreation Area	Low visibility	Heavy use	BG
Bellaire Lake Recreation Area	Moderate visibility	Heavy use	BG

FG = foreground, MG = middleground, BG = background

3.4.3 Environmental Consequences

3.4.3.1 Methodology

The direct, indirect, and cumulative visual resources analysis area is the visible area (viewshed) affected by the project and surrounding lands. Field observations of comparable communications facilities found that visual effects resulting from the installation of a communication tower and related facilities would be most pronounced within the 0.5 mile (the foreground distance zone) though individual tower facilities can be seen by the unaided eye at 4 miles from the project (outer extent of the middleground distance zone) where not screened. Beyond 4 miles, individual facilities are generally difficult to discern.

The scope of analysis and methodology for visual resources follows the Forest Service SMS (Forest Service 2013). Short- and long-term visual impacts were assessed qualitatively utilizing public and agency scoping, field observations, construction design details, sections and elevations, viewshed analyses, photographic simulations, and KOPs per the Forest Service's SMS process and significance criteria, as described below. The analysis includes a comparison of the alternatives compatibility with the Forest Service's SIOs.

Computer-Generated Photographic Simulations

Representative sites (primarily those representing locations with high viewer sensitivity and high potential for visual impacts to existing visual resources) were selected for development of photographic simulations, or photo-realistic renderings, in consultation with the Forest Service and in response to scoping comments. Visual simulations are an important tool in estimating the degree of visual change each alternative may cause to landscape scenery as seen from travel ways and use areas, taking into consideration viewing distance, angle of view, season, time of day, and the type of project changes proposed. The simulations provide documentation regarding landscape contrasts that are expected to occur with project implementation.

Visual simulations of the project are presented at the end of this section and are based on preliminary engineering and project-specific design criteria described in Chapter 2. All KOP's simulate installing a 70-foot high communication tower at either the Middle Bald Mountain or Killpecker site along with other visible project components associated with the tower. None of the simulations show the overhead low voltage electric power distribution line or roads, as they would generally not be visible through or above the forest canopy.

Viewshed Analyses

Viewshed analyses for each action alternative were conducted using GIS to quantify the project's visibility within the analysis area (see **Figure 3-3**). The viewsheds indicate where communication towers with a height of 70 feet would be visible by 6-foot tall viewers. The resulting viewshed analysis shows the area where each alternative would be visible within each distance zone extending from the tower sites, including foreground (0–0.5 mile), middleground (0.5 mile–4 miles), and background (4 -10 miles). Within these distance zones, **Figure 3-3** shows where both sites would be visible as well as locations where only one or the other site would be visible. The yellow color indicates areas where the Middle Bald Mountain site would be visible and the blue color indicates areas where the Killpecker site would be visible. Areas where both sites would be visible are shown in green. Distances greater than 10 miles are considered to be seldom seen or at a distance barely discernable to the unaided human eye. It should also be noted that the visibility analysis does not account for screening provided by vegetation, which is extensive in much of the analysis area.

Key Observation Point Analyses

KOPs are representative viewing locations within the analysis area, which have been chosen based on scoping comments in consultation with the Forest Service for detailed analysis and visual simulations. The selection of KOPs is based on a variety of factors including the type of use and concern level, distance zone, landscape character type and associated scenic attractiveness and integrity.

Four KOPs have been identified among the primary and secondary travelway/use areas for detailed visual analysis. The KOP's are listed below:

- KOP 1 – Red Feather Lakes Road
- KOP 2 – Bellaire Lake Day Use Area
- KOP 3 – Killpecker Trail as it crosses the meadow on the western slope of the Middle Bald Mountain site
- KOP 4 -- Middle Bald Mountain meadow near Killpecker Trail

Effects of each alternative by KOP are described in **Table 3-4** and shown in the simulations at the end of this section.

Field Observations

The impact analysis takes into account differences between photographic simulations, viewshed analyses and the actual appearance of project structures in the landscape. Photographic simulations cannot depict 360-degree views and ever-changing environmental conditions. The human eye sees differently than a camera lens: human vision is binocular and dynamic, compared to a camera that tends to flatten an image. A photographic simulation portrays a single atmospheric, lighting, and seasonal condition. Field observations of comparable facilities aided in preparing a comprehensive evaluation.

Figure 3-3 Communication Site Viewsheds

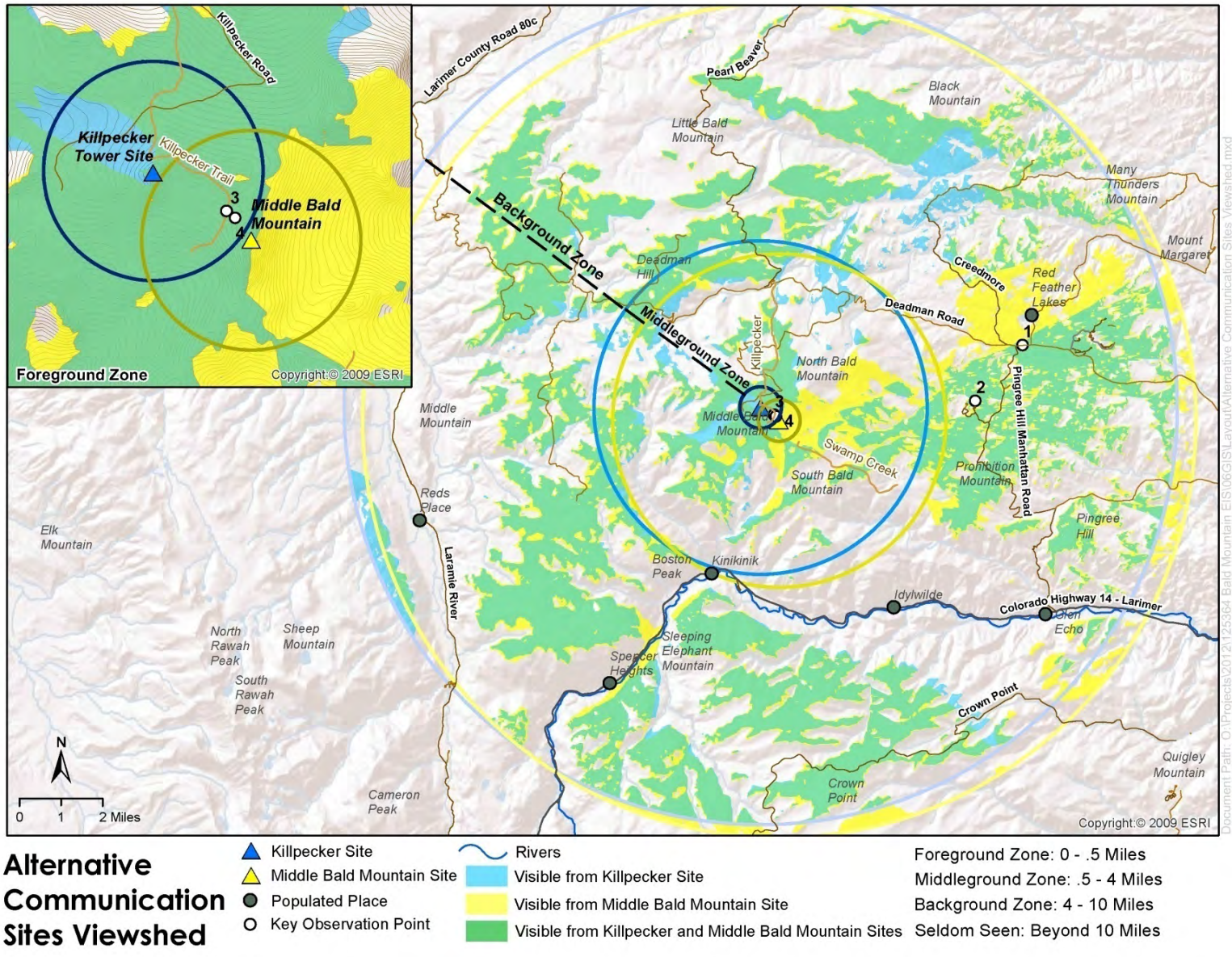


Table 3-4 Impacts by Key Observation Points

	KOP 1	KOP 2	KOP 3	KOP 4
Location, View Direction	Red Feather Lakes Road: View looking to southwest	Bellaire Lake: View looking to west	Killpecker Trail: View looking to southeast	Middle Bald Mountain near Killpecker Trail
No Action	No effects	No effects	No effects	No effects
Proposed Action	Minor Adverse Impacts- The tower site is located approximately 6 miles from this view-point using a straight line measurement. Only the upper 40 feet of the tower would be visible above the summit. At this distance, the tower would be barely discernable and not likely to attract attention from most, if not all, viewers.	Minor Adverse Impacts-The tower site is located approximately 4.7 miles from this viewpoint using a straight line measurement. Only the upper 40 feet of the tower would be visible above the summit. At this distance, the tower would be difficult to discern and not likely to attract attention from most, if not all, viewers.	Significant Adverse Impacts-The tower site is located approximately 0.2 mile from a point along the Killpecker Trail. At this open location, the entire tower is visible along with other facilities such as the equipment building and ground-level cable tray.	Significant Adverse Impacts-The tower site is located approximately 0.1 mile from this KOP. Similar effects to those described for KOP 3.
Preferred Alternative	Negligible to Minor Adverse Impacts- The tower site is located approximately 6.5 miles from this viewpoint and at the edge of visibility. The tower site is beyond the prominent ridge extending north from Middle Bald Mountain. Only the upper 20 feet of the tower would be visible above the trees that cover the tower site. At this distance, the tower would be barely discernable and not likely to attract attention from most, if not all, viewers.	Negligible to Minor Adverse Impacts- The tower site is located approximately 5.2 miles from this viewpoint using a straight line measurement. Only the upper 20 feet of the tower would be visible above the trees. At this distance, the tower would be barely discernable and not likely to attract attention from most, if not all, viewers.	No effect- The tower site is generally not visible from the trail. Visibility of the site is screened from the Trail itself by trees bordering the Trail.	Minor Adverse Impact- The tower site is located approximately 0.5 mile from the KOP which is in the Middle Bald Meadow to the east (uphill) from the Killpecker Trail. This viewpoint was selected to represent visibility from the open meadow areas on Middle Bald Mountain. From this KOP, the upper portion (30-40 feet) of the tower would be visible above the trees. No other project facilities would be visible due to the forest cover surrounding the tower site.

Compliance with Forest Plan Management Direction

The predicted impacts to viewers were compared to Forest Plan management standards and guidelines for that area. Forest Plan standards and guidelines are designed to maintain a specific visual experience, and are used to determine whether alternatives are within or exceed the allowable degree of visual change for the area.

3.4.3.2 Measurement Indicators

- Comparison of existing to resulting scenic integrity objectives (Forest Plan Standard).
- Communication tower visibility from selected KOPs as well as other sites in the analysis area (i.e., Red Feather Lakes, the Upper Poudre Canyon, etc.) assessed per the impact intensity definitions defined below.

Impact Intensity	Intensity Description
Negligible	Effects would not result in any perceptible changes to existing views.
Minor adverse	Effects would result in slightly detectable changes to views.
Moderate adverse	Effects would be readily apparent and would change the character of visual resources in the area.
Significant adverse	Effects would be highly noticeable, visible from a considerable distance or over a large area. The character of visual resources would change substantially.

3.4.3.3 Significance Criteria

A significant impact on visual resources would result if constructing or operating the project would result in substantial dominant visual changes in the landscape that are seen from highly sensitive viewer locations (e.g., community gateways, roadside parks, viewpoints, and historic markers) or locations with special scenic, historic, recreational, cultural, archaeological, or natural qualities.

3.4.3.4 No Action Alternative

The No Action Alternative would not result in construction of a new communication tower and related facilities. Therefore, there would be no effects on visual resources.

3.4.3.5 Proposed Action – Middle Bald Mountain Site

Short- and long-term direct effects within the analysis area from the Proposed Action are described in this section. **Table 3-4** describes the impacts by KOP and a viewshed analysis is shown in **Figure 3-3**. Simulations of the Proposed Action are presented at the end of this section.

The 70 foot communication tower would be the most visible of the site elements in views from more distant viewpoints. An example of the project's visibility is illustrated by the simulation shown in **Figure 3-4**, which is a view looking west from the Red Feather Lake vicinity (KOP 1). The tower site is located approximately 6 miles from this viewpoint using a straight line measurement. Only the upper 40 feet + of the tower would be visible above the summit. At this distance, the tower would be difficult to discern and not likely to attract attention from most viewers though visible near the top of the prominent ridge of Middle Bald Mountain. A similar view of the project is shown from KOP 2 (view from Bellaire Lake) in **Figure 3-5**. There would be minor impacts in the background distance zone at those locations with an open view to the Middle Bald Mountain site, which are limited to a few locations along the Deadman Road and other points, such as Bellaire Lake, where openings in the forest canopy allow long distance views.

A higher level of impact would result to recreational users on the Killpecker Trail as well as visitors to the open meadow areas to the west of the summit of the surrounding Middle Bald Mountain. **Figure 3-6** is a simulation of the project as seen from a segment of the Killpecker Trail as it passes through the a meadow setting (KOP 3). The tower site is located approximately 0.2 miles from this viewpoint. When visible in the immediate foreground at open locations, the entire tower would be visible along with other facilities such as the equipment building and cable tray. Even with design criteria intended to blend the equipment building with its surroundings, the proposed action would result in a significant adverse effect. The lack of structures or other modifications to the landscape and the visual contrast created by project facilities in terms of form, line and scale would dominate the view and result in a level of impact that would not be consistent with the existing SIO of low. Overall, the resulting SIO at the communication site with the proposed tower would be Very Low, described as follows:

> *Very Low* – The valued landscape character 'appears heavily altered.' Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural opening, vegetation type changes, or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so elements such as unnatural edges, roads, landings, and structures do not dominate the composition.

At most locations within the middleground distance zone, the tower and support facilities would not be visible from established viewpoints along NFSRs, recreation trails or use areas. Although terrain modeling indicates potential visibility from a large portion of this distance zone, the nearly continuous forest cover sharply limits visibility from these locations.

In addition to the communication tower and support facilities, the project includes a 12.6 mile power distribution line that would closely parallel Deadman Road, NFSR 300, and NFSR 517 leading to the Middle Bald Mountain site. A 10-foot ROW on either side of the power line would be cleared of trees, adding to the corridor effect through the forest previously created by the roads. The power line would be visible but the effect would be minor due to the fact that the line would be backdropped by trees and the wooden poles would be consistent in scale, texture, and color with the adjacent forest. As such, the landscape character would appear slightly altered and the contrast created by the project would remain visually subordinate. This degree of contrast is consistent with the SIO of Moderate that extends along the road network over nearly the entire distance between Red Feather Lakes and the project site. However, a short segment of the distribution line (0.3 mile) would cross through an area with an SIO of High. This segment of the line would not be consistent with the SIO designation when seen from the adjacent Deadman Road.

3.4.3.6 Preferred Alternative – Killpecker Site

Short- and long-term direct effects within the analysis area from the Preferred Alternative are described in this section. **Table 3-4** displays the impacts by KOP and a viewshed analysis is shown in **Figure 3-3**. A simulation of the Preferred Alternative from KOP 4 is presented as **Figure 3-7**.

The 70-foot communication tower would be the most visible project element in views from more distant viewpoints. Only the upper 40 feet + of the tower would be visible above the trees that cover the tower site. Impacts would be negligible in the background distance zone at those locations with an open view to the Killpecker site, which are limited to a few locations along the Deadman Road, Red Feather Lakes Road (KOP 1), and Bellaire Lake (KOP 2) where openings in the forest canopy allow long distance views **(Figure 3-3)**. Due to screening from the prominent ridge of Middle Bald Mountain and position of the tower site from these locations, less than 20 feet of the tower would be barely discernable above the forest canopy and terrain. Simulations from KOPs 1 and 2 were not prepared as the top of the tower would be at the edge of visibility and indiscernible on a printed simulation. At this distance (6.5 miles), the tower would replicate the lines and texture of the forest canopy and not be likely to attract attention from most, if not all, viewers. Impacts would be negligible.

When viewed in the foreground distance zone from open meadows in the foreground, a higher level of impact would result to recreational users, such as to visitors at the open meadow areas near the summit of Middle Bald Mountain. The Preferred Alternative would not be visible from the Killpecker Trail (KOP 3) or North Lone Pine Trail due to forest screening. **Figure 3-7** (KOP 4) is a simulation of the project as seen from a point above the Killpecker Trail in the open meadow, downslope of the summit of Middle Bald Mountain. This view point is representative of views that would be experienced by visitors looking west during their ascent to the Middle Bald summit to enjoy the long distance views to the south and west. The tower site is located approximately 0.5 miles from this viewpoint. At this open location, the upper portion of the tower is visible above the tree canopy but other facilities such as the equipment building are hidden from view. The vertical line of the tower repeats the form and line of the surrounding forest but a close observer would notice the contrast created by the dish and lattice texture of the tower. The resulting SIO at the communication site would therefore not be consistent with the existing SIO of High, but would be consistent with an SIO of Low, which provides for the landscape character to appear 'moderately altered' with deviations beginning to dominate the valued landscape character being viewed.

At most locations within the middleground distance zone, the tower and support facilities would not be visible from established viewpoints along the forest road network, recreation trails or use areas. Although terrain modeling indicates potential visibility from a large portion of this distance zone, the nearly continuous forest cover sharply limits visibility from these locations. In contrast to the Middle Bald Mountain site, there are very few users or viewpoints in the vicinity of the Killpecker site, which reduces the overall visual impacts of this alternative.

In addition to the communication tower and support facilities, the project includes an 11.6 mile power distribution line that would closely parallel Deadman Road and NFSR 300 leading to the Killpecker site. A 10-foot ROW on either side of the power distribution line would be cleared of trees, adding to the corridor effect through the forest created by the roads. The power line would be visible but the effect would be minor due to the fact that the line would be back dropped by trees and the wooden poles consistent in scale, texture, and color with the adjacent forest. As such, the landscape character would appear slightly altered and the contrast created by the project would remain visually subordinate. This degree of contrast is consistent with the SIO of Moderate that extends along the road network the entire distance between Red Feather Lakes and the Killpecker site.

3.4.3.7 Comparison of Alternatives

The Preferred Alternative would have lower impacts on visual resources than the Proposed Action. Neither alternative would be consistent with the existing SIO's. The primary difference between the alternatives is visibility from KOP 3s and 4, the Killpecker Trail, and the setting of Middle Bald Mountain. The Proposed Action would result in a significant adverse impact to trail users at both KOP 3 and KOP 4 compared to the Preferred Alternative. In addition, visual effects at the Middle Bald summit vicinity would be much higher from the Proposed Action compared to the Preferred Alternative.

3.4.3.8 Cumulative Effects

Other past, present and reasonably foreseeable future actions in the vicinity of Deadman Road (County Road 162), NFSR 300, and NFSR 517 include ongoing road maintenance, roadside hazard tree removal, and timber and fuels projects as described in Section 2.8. The cumulative effect of past and present road maintenance and timber and fuel projects has been to modify the visual setting along the power distribution line corridor leading to both the Killpecker and the Middle Bald Mountain sites. Future thinning operations in the vicinity of the Killpecker and Middle Bald Mountain sites, and vegetation clearing for the proposed power distribution line, would add incrementally to the overall cumulative effect to visual resources along the power distribution line corridor. Cumulative effects to visual resources would be significant for the Proposed Action and minor for the Preferred Alternative.

Figure 3-4 KOP 1 Red Feather Lakes Road: View Looking to Southwest

Existing Condition

Visual Simulation

Figure 3-5 KOP 2 Bellaire Lake: View Looking to West

Existing Condition

Visual Simulation

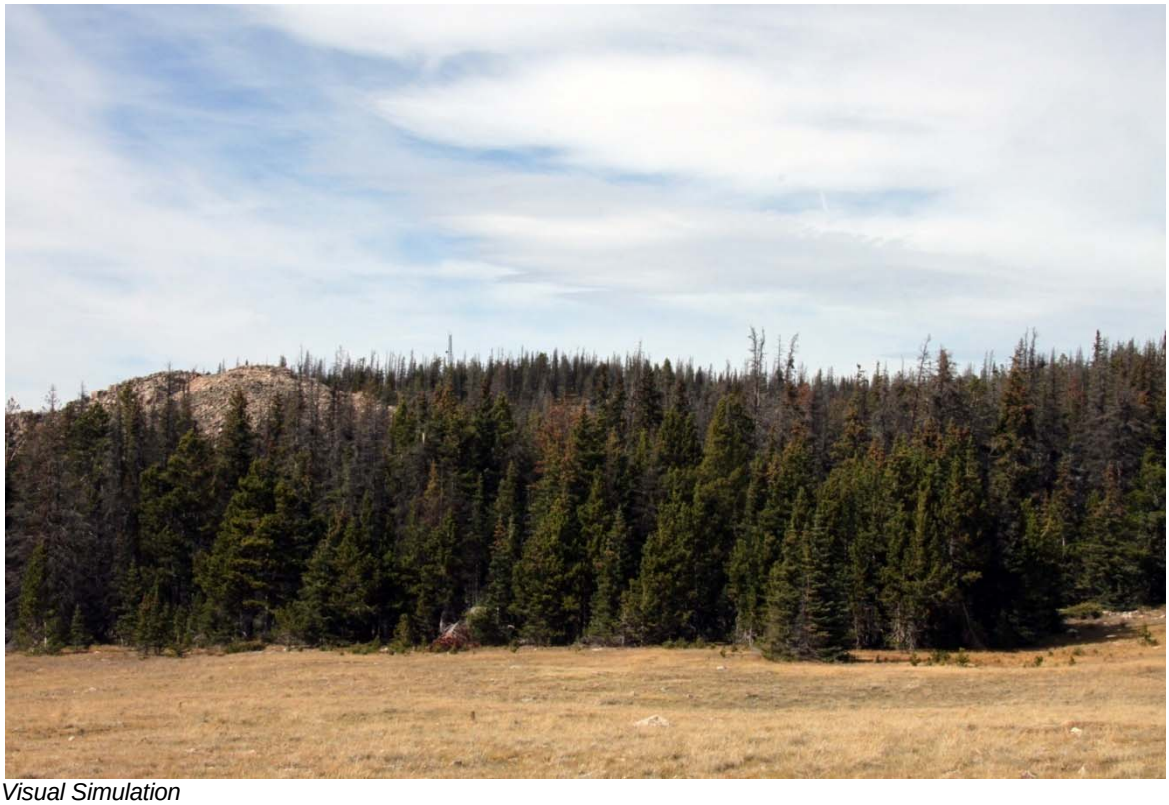
Figure 3-6 KOP 3 Killpecker Trail: View Looking to Southeast

Existing Condition

Visual Simulation

Figure 3-7 KOP 4 Middle Bald Mountain near Killpecker Trail: View Looking to West

Existing Condition



Visual Simulation

3.5 Vegetation

3.5.1 Issues

Issues identified for vegetation resources are provided below:

- Impacts to wetlands, fens, seeps, subalpine and alpine soils, and vegetation from construction and maintenance of the access road and communication facilities, including increased foot and motorized traffic, social trails, spread of noxious weeds, etc.
- Impacts to affected Federal or State Threatened or Endangered species (TES), Forest Service sensitive species (FSS), and management indicator species (MIS) from construction, operation, and maintenance of the proposed communication site and power distribution line

3.5.2 Affected Environment

This section describes the affected environment for vegetation, rare plants, old growth, noxious weeds, and wetland resources that may be affected by the proposed action or alternatives for the Middle Bald Mountain Communications Site. The analysis area for vegetation was defined to include a 50-foot wide buffer zone surrounding all project components.

3.5.2.1 Vegetation Cover Types

The project is predominantly located in the Crystalline Subalpine Forests EPA Level IV ecoregion, with the eastern portion of the power distribution line located within the Crystalline Mid-Elevation Forests ecoregion. Vegetation communities within along the power distribution line alignment were surveyed in July of 2007 and a general reconnaissance of the proposed and alternative tower sites and access roads were completed in the fall of 2013 (BMEC 2007; AECOM 2013). Observations recorded during initial field evaluation included vegetation communities and dominant vegetation associated with each vegetation community.

The analysis area is characterized as mountainous, with lodgepole pine dominant at the lower elevations and subalpine fir and Engelmann spruce dominant at the higher elevations. There is an increasing amount of dead woody vegetation (fuel) from mountain pine beetle infestation. There are eight vegetation communities within the analysis area including ponderosa pine woodland, mountain shrub-willow, mixed conifer forest, aspen, grassland, subalpine fir and Engelmann spruce, and lodgepole pine (see **Figure 3-8**). Intermixed within the vegetation communities are areas of rock outcrops. **Table 3-5** provides a summary of the acreages for each vegetation cover type within the analysis area affected environment for vegetation. Wetland communities are included in this table but discussed in greater detail in Section 3.5.2.6. The vegetation cover types present within the analysis area are illustrated on the **Figure 3-8**.

Table 3-5 Analysis Area Vegetation Cover Types

Symbol	Vegetation Cover Type	Acres
TLP	Lodgepole pine	38
TSF	Subalpine fir / Engelmann spruce	20
GRA	Grassland	12
FOR	Forested (Mixed Conifer)	6
NRK	Barren	1
SWI	Shrub–Willow	<1
TAA	Aspen	2
TPP	Ponderosa Pine	2

Symbol	Vegetation Cover Type	Acres
SHR	Mountain Shrub	<0.1

Descriptions of the plant communities for each vegetation cover type are provided below. Species nomenclature is consistent with the NRCS Plants Database (NRCS 2013).

Lodgepole Pine

This community type is found at middle to higher elevations of the analysis area. Lodgepole pine (*Pinus contorta*) is the dominant overstory species with quaking aspen interspersed. The shrub prickly wild rose (*Rosa acicularis*) occurs occasionally. Herbaceous species include goldenrod (*Solidago* spp.), lupine (*Lupinus* sp.), Idaho fescue (*Festuca idahoensis*) and western yarrow (*Achillea lanulosa*).

Subalpine fir / Engelmann Spruce

The overstory of this cover type is dominated by Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*) in varying proportions but blue spruce (*Picea pungens*), lodgepole pine, Douglas-fir (*Pseudotsuga menziesii*), and limber pine (*Pinus flexilis*) also were present. This forest type generally occurred between 8,200 and 10,800 feet. The understory of the cover type varies but commonly includes grouse whortleberry (*Vaccinium scoparium*), common dandelion (*Taraxacum officinale*), smooth brome (*Bromus inermis*), western yarrow, goldenrod, pussytoes (*Antennaria* spp.) and Idaho fescue. As both dominant tree species are shade-tolerant, stands of subalpine forest are typically uneven-aged and multi-storied, with younger spruces and firs comprising the substrata.

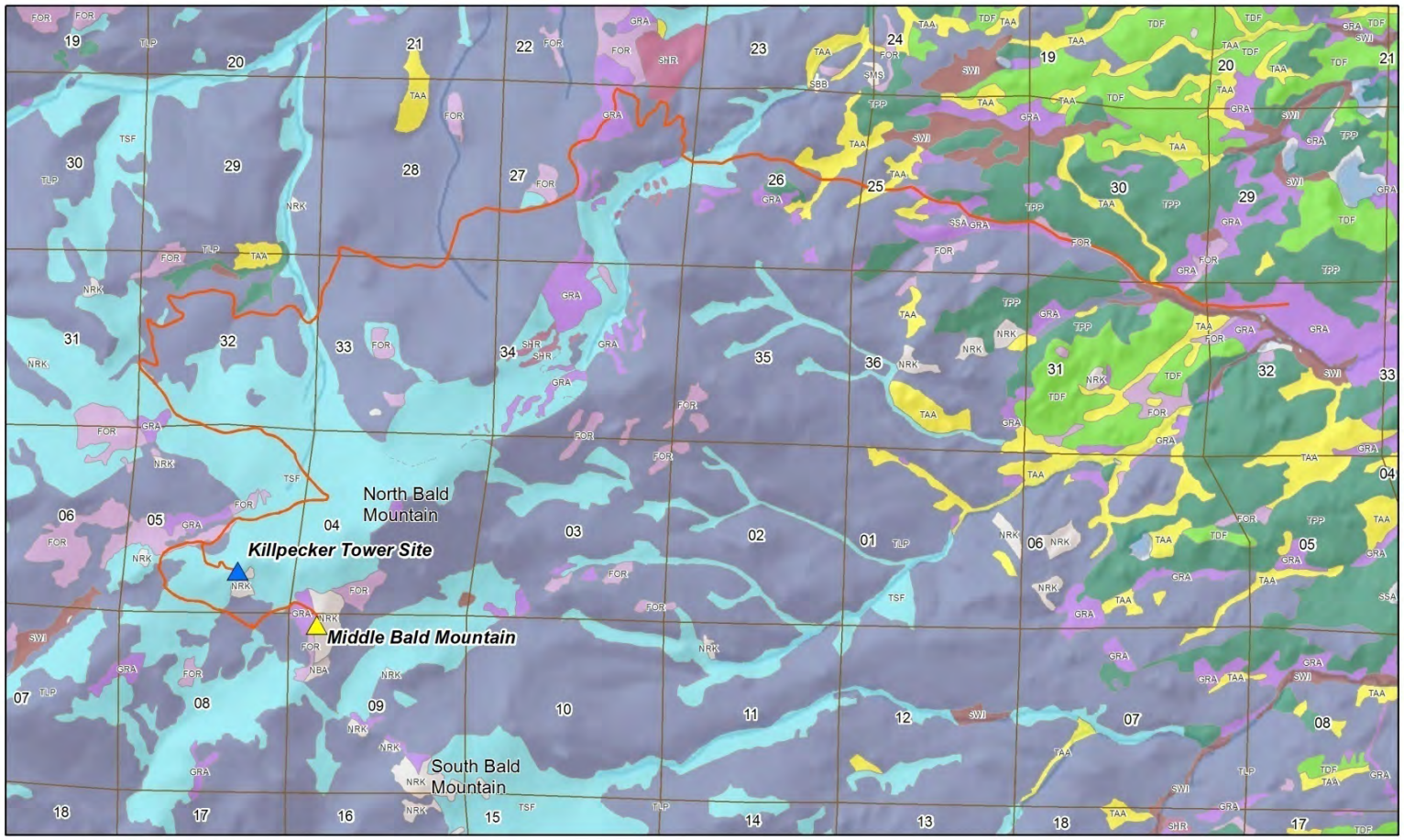
Grassland

This vegetation community consists of herbaceous communities found at the summit of Middle Bald Mountain, and interspersed areas found along NFSR 300. The grassland along NFSR 300 is composed of herbaceous and forb species including bottlebrush squirreltail (*Sitanion hystrix*), needle-and-thread (*Hesperostipa comata*), junegrass (*Koeleria macrantha*), sulphur-flower buckwheat (*Eriogonum umbellatum*), common dandelion, smooth brome, western yarrow, and Idaho fescue.

The grassland community at the summit of Middle Bald Mountain was surveyed by the Forest Botanist in 2012 in response to concerns raised by the public, in a report prepared by Dr. Jim Erdman. The response of the Forest Botanist to the vegetation community classification issues raised in *Middle Bald Mountain's Alpine-Tundra Landscape, Unique in the Laramie Mountains Region of Northern Colorado* (Erdman 2012) is presented below:

> The Forest Service Botanist has reviewed the paper entitled *Middle Bald Mountain's Alpine-Tundra Landscape, Unique in the Laramie Mountains Region of Northern Colorado* by Dr. Erdman (revised version dated March 22, 2012). Although it is true that alpine-affinity plants do occur on site, the botanist respectfully disagrees with the report's overall assessment that the area exhibits a true alpine plant community (referred to as "alpine turf"). The definition of an alpine life zone is that such a zone occurs above upper treeline. Presence of numerous limber pine trees occurring at the base of the rocky summit, and in fact nearly to the top of the summit itself, which are situated clearly above the surrounding grass-herb plant community referred to as "alpine" in the report, means that the grass-herb community rests below treeline, and cannot therefore be a true alpine community. Some of these trees are clearly visible above the grass-herb foreground . Further, although there are numerous alpine plant species present in the grass-herb community, they are not dominant, and their mere presence does not imply that the community as a whole is "alpine" or is functioning ecologically as alpine.

Figure 3-8 Vegetation Cover Type



In addition to plants that typically occur above treeline cited in the report (i.e., alpine avens, alpine sandwort and alpine willow), the botanist also observed localized presence of the alpine-affinity vagrant lichens *Coelocaulon* (*Cetraria*) *aculeatum* and *Dactylina madreporiformis*. Although alpine plants are present, they are not dominant in terms of canopy cover or plant production. Rather, the community is dominated by true subalpine grasses and herbs, with cosmopolitan (common in subalpine and grading into alpine) bryophytes and lithic lichens dominating the non-vascular community. Rather than viewing the grass-herb complex as "alpine turf," the botanist's professional opinion is that it is more accurately considered as a plant community *transitional* between upper subalpine meadow and true alpine community, with subalpine plants being more dominant. It is not uncommon to see demarcation between subalpine and alpine plant communities blurred and indistinct. Being situated currently at the interface of two life zones, it is possible that under differing climatic conditions of the long-term past, the summit area of Middle Bald Mountain could have been more dominated by alpine vegetation or more dominated by subalpine vegetation, or that it has and may continue to vacillate between the two over time, but these scenarios are purely speculative.

Whether the plant community is viewed as true "alpine" or "subalpine transitional to alpine" is somewhat moot, however, as the botanist agrees with the report in concluding that the grass-herb community is noteworthy. The botanist feels that the area's representation of such a transitional community is not present this far east elsewhere on the District, and in that sense carries distinction and adds value to local biological diversity. He also recognizes that the alpine elements and overall nature of the community render it sensitive to anthropogenic disturbances. The report's reference to the community as "unique" carries vague meaning, because all plant communities at some level of scale can be considered "unique" in their specific species assemblage, that is, they will differ from all other plant communities. To the botanist's knowledge, based upon reviewing past rare plant survey reports and conducting several rare plant surveys in the area himself, the community does not harbor any rare plant species or "rare" combinations of subalpine and alpine plants. It is unknown if similar communities occur further west, for example, in the Rawah Wilderness Area (Popovich 2013).

Mixed Conifer Forest

The mixed conifer forest is found predominantly in the southern portions of the analysis area. The canopy cover varies in this vegetation community, with some areas having a more open canopy. Dominant species are coniferous species including Ponderosa pine (*Pinus ponderosa*), Douglas-fir, lodgepole pine, and limber pine. Ponderosa pine and Douglas-fir are more dominant in the areas with the open canopy cover. In the areas with a closed canopy, the understory includes common juniper, fivepetal cliffbush, and kinnikinnick. Open canopy understory species include Geyer's sedge (*Carex geyeri*), Rocky Mountain fescue, common juniper, kinnikinnick, and mountain ninebark.

Barren

Barren and sparsely vegetated areas within the analysis area typically have less than 0 to 10 percent vegetative cover and usually consist of rocky outcrops.

Shrub–Willow

Any type of wetland with a woody shrub overstory would be considered a scrub-shrub wetland. Willows (*Salix* spp.) are the most common shrubs to dominate scrub-shrub wetlands, but alders (*Alnus incana*), red osier dogwood (*Cornus sericea*), birches (*Betula* spp.), and other woody shrubs also may dominate the overstory. Lower stratum vegetation may include sedges and rushes and grasses such as red top (*Agrostis* sp.) and bluegrass (*Poa pratensis*), depending upon site moisture. Other common species include timothy (*Phleum pratense*), common dandelion, and bog orchid (*Limnorchis saccata*).

Aspen

Quaking aspen (*Populus tremuloides*) is the dominant tree species in this cover type. These stands are often comprised of cloned coppice stems and thus are genetically identical. Mid-story tree species may include aspen saplings, particularly along the periphery of the stand. The shady interior of aspen stands frequently provides conditions for shade-tolerant conifers such as fir and spruce in the mid-story; the process of forest succession often leads to a coniferous forest after the pioneering aspen stand gives way over time. Tall forb communities usually cover the ground. These may be comprised of cow parsnip (*Heracleum sphondylium*), wild strawberry (*Fragaria* spp.), water hemlock (*Cicuta douglasii*), bracken fern (*Pteridium aquilinum*) and other forbs and grasses.

Ponderosa Pine

The ponderosa pine community is found at the lower elevations of the project vicinity (8,300 to 8,800 feet). Ponderosa pine is the dominant over story tree with small areas of quaking aspen. Common shrubs include antelope bitterbrush (*Purshia tridentata*), shrubby cinquefoil (*Potentilla fruticosa*), fringed sage, and wax current (*Ribes cereum*). Common understory herbaceous species include mountain muhly (*Muhlenbergia montana*), bottlebrush squirreltail pussytoes, needle-and-thread, junegrass, hairy false goldenaster (*Heterotheca villosa*) and penstemon (*Penstemon* spp.).

Mountain Shrub

Often in association with the Ponderosa Pine woodland vegetation community, the mountain shrub mosaic is scattered throughout the analysis area. It covers 15 percent of the analysis area. Dominant vegetation are shrubs, including alderleaf mountain mahogany, fivepetal cliffbush (*Jamesia Americana*), common juniper (*Juniperus communis*), chokecherry (*Padus virginiana*), kinnikinnick (*Arctostaphylos uva-ursi*), and Woods' rose (*Rosa woodsii*). Dominant trees include Ponderosa pine, and Douglas-fir, with limited cover.

3.5.2.2 Threatened and Endangered Plants

No proposed, threatened, or endangered plant species were encountered or are suspected. There is no designated critical suitable habitat for proposed, threatened, or endangered plants, and very little suitable habitat for sensitive species. Therefore, a No Effect determination is warranted.

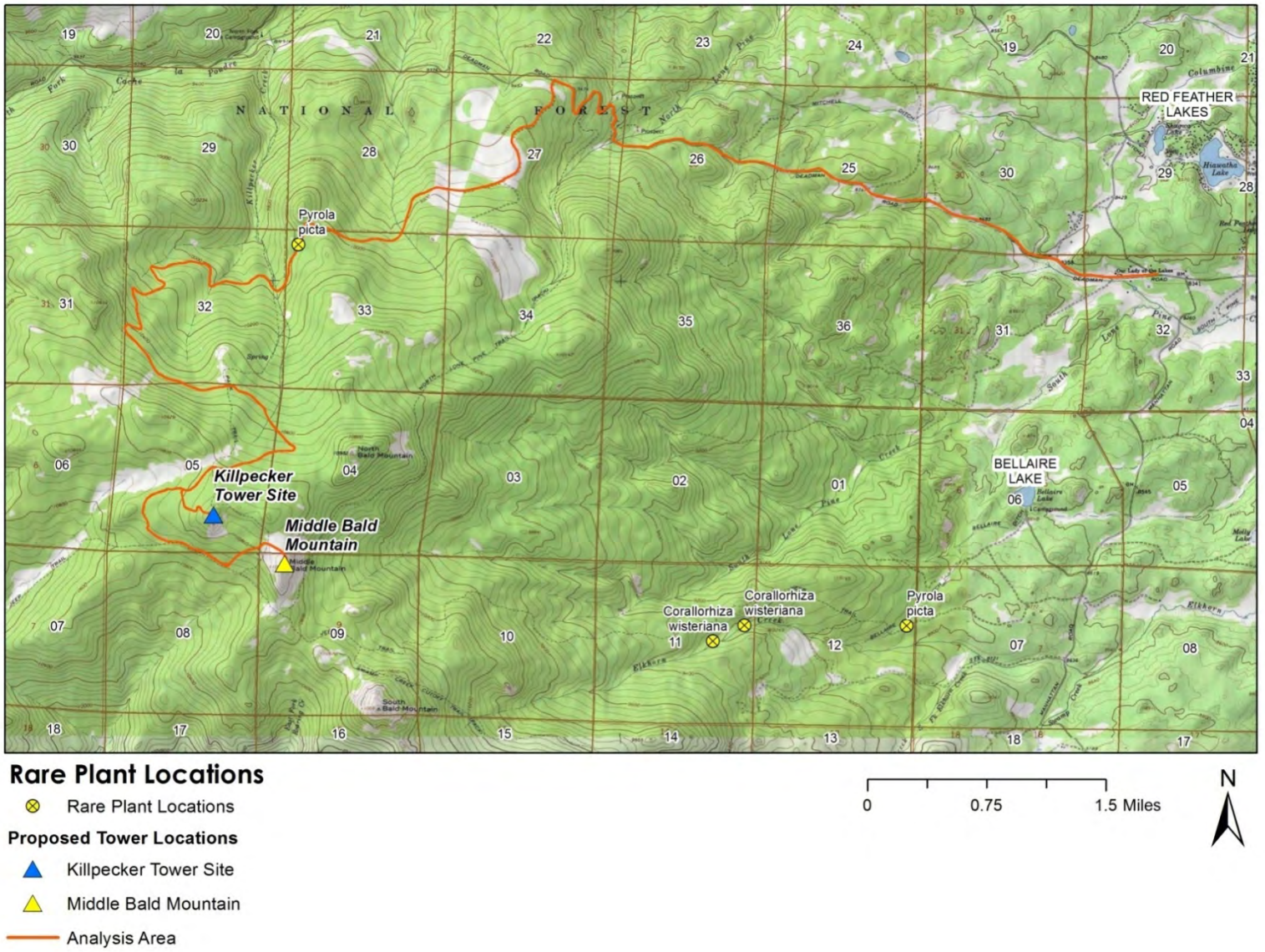
3.5.2.3 Forest Service Sensitive and Rare Plants

No sensitive plant species were encountered or are suspected. There is very little suitable habitat for sensitive species. Therefore, a No Impact determination is warranted.

Portions of the analysis area and surrounding area were surveyed for rare plants (CR 162/Deadman Road, NFSR 300, NFSR 517 from the intersection of CR 69 and NFSR 517). The survey occurred along both sides of the roadway along CR 162/Deadman Road, NFSR 300 and NFSR 517. A portion of the proposed power distribution line along CR 162/Deadman Road and NFSR 300 occurred in the “borrow” area along each side of the roadway, which generally provided unfavorable habitat for many of the survey target species (excluding several *Botryichium* species). See **Appendix B** for a listing of all plants that were surveyed in 2007. Surveys of the Middle Bald Mountain alternative access road alignments and communication site were conducted by the Forest Botanist in 2012 (Popovich 2012). Surveys of the Killpecker Site access road alignment and communication site were conducted by the Forest Botanist in 2013.

One target species, pictureleaf wintergreen (*Pyrola picta*), and a species not listed on the target list, spring coralroot (*Corallorhiza wisteriana*), were located during the surveys. Pictureleaf wintergreen was located along NFSR 300 and NFSR 517 and spring coralroot was found only along NFSR 517 (see **Figure 3-9**) (BMEC 2007). Additionally, a rare lichen, *Dactylina madreporiformis*, was observed by the Forest Botanist, near the Middle Bald Mountain site.

Figure 3-9 Rare Plant Locations



3.5.2.4 Old Growth

The analysis area is primarily located in the Deadman Geographic Area with a Forest Plan goal to encourage recruitment and retention of old growth. Old growth stands contain older, larger diameter trees and other structural features such as snags, down logs and gaps in the canopy layers that include patches of regeneration. The dominant lodgepole pine stands observed on Middle Bald Mountain likely initiated in the late 16th to early 17th centuries. There are some notable old-aged conifer trees from that era in the stand to the west of the meadow at the Middle Bald summit. Lodgepole pine stands of this age are unusual and so far undocumented in the Colorado Front Range. Lodgepole pine stands typically experience stand-replacing disturbances, usually in the form of crown fire, within 200 to 300 years. However, this ancient stand does not appear to have experienced a stand-replacing disturbance for nearly 500 years, but has been slowly transforming, a few trees at a time, through classic gap dynamics (Huckaby and Négron 2014).

Old-growth related polygons that are located within the analysis area include inventoried old growth forest and old-growth retention stand polygons ("old-growth related"). Approximately 4 acres total of these old-growth polygons overlap the analysis area. Additionally, there are a total of 3 acres of stands identified as "Tentatively suitable – Unavailable" old growth retention areas which overlap with the analysis area. Forest Plan direction for these stand allocations in lodgepole pine or ponderosa pine types is to manage vegetation to achieve a mix needed for wildlife habitat and to reduce fuel loading, manage lodgepole stands to reduce fuels, and manage ponderosa pine to emulate conditions of a non-lethal understory fire regime and to emphasize old-growth forest conditions, and prescribed fire or thinning treatments that maintain or encourage their development toward old-growth forest conditions is allowable.

3.5.2.5 Noxious Weeds

The Federal Plant Protection Act of 2000 (formerly the Noxious Weed Act of 1974) and Executive Order 13112 of February 3, 1999, require cooperation with state, local, and other Federal agencies in the application and enforcement of all laws and regulations relating to the management and control of noxious weeds. Forest Service specific guidance on noxious weeds is outlined in the Noxious Weed Management Plan for the Arapaho and Roosevelt National Forests and Pawnee National Grassland, (USFS 2003). Management of noxious weeds on the Forest is based on the concept of integrated pest management. The goal is not total eradication of noxious weeds, but successful long-term management through a combination of education, prevention, biological, chemical, cultural, and physical treatments. In general, noxious weeds are prioritized for treatment based on aggressiveness; current extent of infestation and priority of species designated by, and coordinated with, state and county weed programs. Noxious weeds in Colorado are non-native plant species that have been designated by the Colorado Department of Agriculture due to their invasiveness, aggressiveness, or the rate at which they spread and adversely affect desired native plants or agricultural crops and rangelands. The Colorado Noxious Weed Act (Colorado Department of Agriculture 2012) states that noxious weed management is the responsibility of local governing agencies, including incorporated municipalities, counties, and state and Federal agencies. The Colorado Department of Agriculture manages and regulates noxious and invasive species through the Colorado Noxious Weed Act, which classifies noxious weeds into three lists, A, B, and C (§ 35 5.5-101 through 119, CRS [2003]). Each list has specific control requirements, with the most stringent requirements for those species found on List A. List A species are designated for eradication. List B includes species for which state noxious weed management plans would be developed to stop the continued spread of these species. List C includes species for which state noxious weed management plans would be developed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands (CDA No Date 1). In addition, the Act states that each county in the state shall adopt a noxious weed management plan for all the unincorporated lands within the county. The Larimer County Noxious Weed Management Plan was approved by the Board of County Commissioners on March 6, 2008.

Field surveys for noxious weeds were conducted for portions of the analysis area during the vegetation surveys by BMEC in July of 2007 (see **Figure 3-10**) and surveys of the Killpecker access road and site were conducted by the Forest Botanist in 2013. During field surveys state and county listed noxious weeds observed during the field survey were recorded by species, approximate size of weed patch, and location.

Four noxious weed species listed on Colorado's noxious weed list B (Larimer County 2012) were identified in the survey area (**Table 3-6**). List B species are common enough in parts of the state that eradication is not feasible, though the species are still recommended for eradication, suppression, or containment depending on distribution and densities around the state. Canada thistle (*Cirsium arvense*) was found along CR 162/Deadman Road, NFSR 300 and NFSR 517. Houndstongue (*Cynoglosumn officinale*), leafy spurge (*Euphorbia esula*) and yellow toadflax (*Linaria vulgaris*) were found only along CR 162/Deadman Road. Species listed on Colorado's weed list A and weed list C were not found during the survey.

Table 3-6 Colorado Noxious Weed Species Found in the Analysis Area

Scientific Name	Common Name	Colorado Status*
Cirsium arvense	Canada thistle	List B
Cynoglossum officinale	Houndstongue	List B
Euphorbia esula	Leafy spurge	List B
Linaria vulgaris	Yellow toadflax	List B

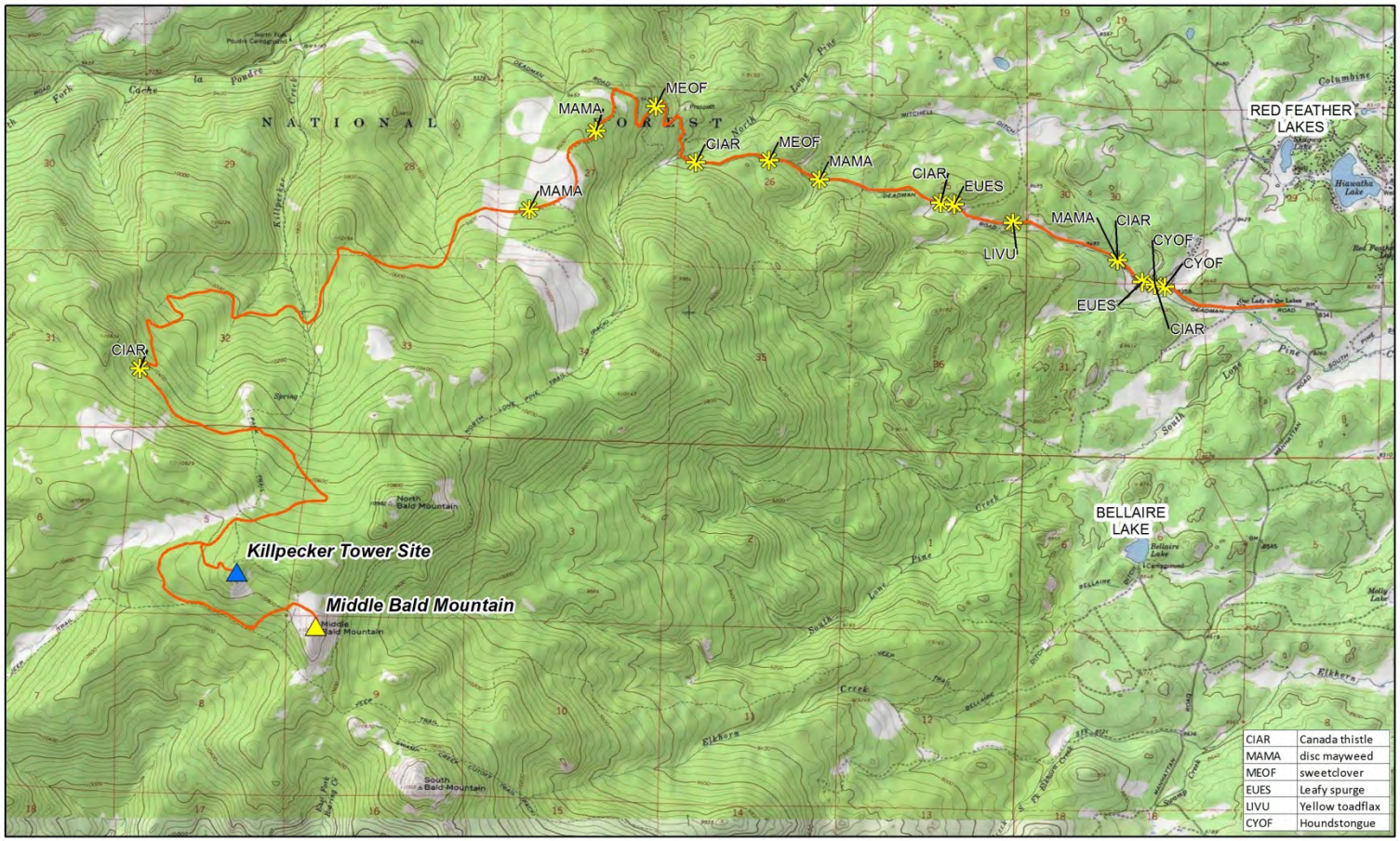
* List B species are mandated for eradication in some parts of the state and recommended for suppression or containment in other areas depending on distribution and densities.

3.5.2.6 Wetlands

Riparian and wetland areas comprise a small percentage of the lands in the West, but their importance to the surrounding ecosystems and associated species is disproportionately great. Most wildlife species use riparian areas at some point in their life cycles (e.g., many migratory birds during breeding and migration seasons), and some depend almost entirely on these systems (e.g., amphibians). Wetlands and riparian areas are often rich in vegetation diversity and structure, providing food, water, shade, and cover to wildlife and livestock, in addition to acting as water purifiers, supplying groundwater recharge, and aiding in flood control.

Waters of the U.S. are defined in 33 CFR Part 328, Section 3 as all non-tidal waters that are currently, or were used in the past, or may be susceptible to use in interstate commerce; all interstate waters including wetlands (all types of wetlands, including fens, bogs, etc.); all other waters such as interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, of which the use, degradation or destruction could affect interstate commerce; and all impoundments of waters otherwise defined as waters of the U.S. under this definition. Fens, are peat-forming wetlands that receive nutrients from sources other than precipitation: usually from upslope sources. In addition, tributaries of the above listed waters, including arroyos and other intermittent drainages, and wetlands adjacent to the above waters also are considered to be waters of the U.S.

Figure 3-10 Noxious Weeds



Criteria used by the U.S. Army Corps of Engineers (USACE) to determine whether a drainage constitutes a waters of the U.S. include presence of a defined bed, banks, or evidence of an ordinary high water mark. Wetlands adjacent to other Waters of the U.S., such as streams, also are considered to be waters of the U.S. In addition, and as used herein, the term "wetlands" has a regulatory definition as defined in 33 CFR 328. 7(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Note that the frequency and duration of saturation may vary by geographical region, and is largely dependent upon local climatic conditions.

According to the USACE's 1987 Wetland Delineation Manual, a "three-parameter" approach is required for delineating USACE-defined wetlands (USACE 1987), where areas are identified as wetlands if they exhibit hydrophytic vegetation, hydric soils, and wetland hydrology.

Field surveys for wetlands and potential waters of the U.S. were conducted along the proposed access road and Middle Bald Mountain tower site in October 2012 by AECOM field staff. Field reconnaissance surveys were conducted by AECOM field staff along the Killpecker site proposed access road and tower site in November 2013. Along the proposed power distribution line, proper functioning condition surveys were conducted by BMEC in September 2007. Within the analysis area, three perennial streams, and multiple intermittent and ephemeral channels were identified. Most of the identified streams would be crossed by the proposed power distribution line.

No riparian areas or waterbodies are located along the proposed access roads or at the proposed tower sites; however, the access road to the Middle Bald site proposed in the 2006 application crossed a wetland (fen), so that access road was relocated. That new proposed access route is relocated away from the wetland (fen), so project activities would avoid any wetland disturbance.

3.5.3 Environmental Consequences

3.5.3.1 Methodology

The acres of disturbance associated with each alternative are identified in Chapter 2.0. Impacts to vegetation resources from the project were identified based on the locations of the resources in relation to the proposed surface disturbance areas. To determine acres of vegetation disturbed by the project, the known locations of proposed surface disturbances have been overlain on the vegetation layer to determine the amount of acreage disturbed for each vegetation type. The power distribution line ROW would parallel County Road 162 and NFSRs on either side of the road with the exact locations for wood poles to be determined based on topography and engineering considerations. The exact centerline for the power lines and access roads, and associated temporary work areas would be determined during the design phase for of the proposed project. The impacts to vegetation were estimated by multiplying the percent of the analysis area impacted by new surface disturbance-related activities by the acreage of each vegetation type within the analysis area for the anticipated extent of disturbance for construction and operation activities outlined in Chapter 2.0. Design criteria were taken into account in determining acres of potential impact.

For impacts to old growth trees, wetlands, noxious weeds, and special status species, the same methodology as described above for vegetation resources was applied. Design criteria and best management practices were taken into account in determining impacts, including impact avoidance.

3.5.3.2 Measurement Indicators

Measurement indicators identified for vegetation resources include:

- Acres of each vegetation community potentially impacted by each alternative, based on the project footprint;

- Acres of suitable habitat for each species, potentially impacted by each alternative, based on the project footprint;
- Acres (or number) of old-growth trees potentially impacted by each alternative, based on the project footprint; and
- Potential loss of rare plants identified in the Analysis area.

3.5.3.3 Significance Criteria

A significant impact on vegetation would result if any of the following were to occur from constructing and operating the proposed project:

- Loss of rare plants, native plant communities and other sensitive features identified by a state or Federal resource agency.
- Loss to any population of plants that would contribute to a trend toward a species being listed or proposed for listing as threatened or endangered.
- New noxious weed species are introduced into the analysis area, or existing species spread into areas that were previously dominated by native species.
- Degradation or loss of any federal- or state-protected wetland(s), as defined by Section 404 of the CWA or other applicable regulations.
- Direct loss of wetland, fens, or seeps, caused by degradation of water quality, diversion of water sources, or erosion and sedimentation resulting from altered drainage patterns.

3.5.3.4 No Action Alternative

Under the No Action Alternative, the proposed project would not be constructed or operated. Existing uses and activities for recreation and forest management would continue. Impacts to vegetation resources associated with the development of the proposed project would not occur.

3.5.3.5 Proposed Action – Middle Bald Mountain Site

Under the Proposed Action, impacts would include surface-disturbance activities associated with construction and operation of the communication site, access road, and power distribution line. Construction of the communication site would temporarily disturb approximately 0.5 acres of grassland and barren cover types; permanent footprints for communication facility components would occupy < 0.1 acre of the same cover types. Such trees would be avoided when practicable. Assuming none are in the proposed access road disturbance area, the access road would temporarily disturb approximately 2.1 acres of forested cover types including lodgepole pine and subalpine fir/Engelmann spruce. The permanent footprint for the access road would occupy approximately 0.4 acres of the same cover types.

Because vegetation clearing for ROW maintenance would occur within the established ROW for the life of the project, temporary and long-term disturbance areas for the power distribution line are the same. Approximately 31 acres would be disturbed for initial ROW clearing, installation of the overhead power line, and ongoing ROW maintenance. Roughly half of this acreage (15.2 acres) would be associated with the Lodgepole pine cover type. Other vegetation cover types to be affected include subalpine fir/ Engelmann spruce (7.1 acres), grassland (4.3 acres), mixed conifer forest (2.4 acres), ponderosa pine (0.9 acre), aspen (0.7 acres), shrub-willow (0.2 acres), and mountain shrub (<0.1 acres).

Direct surface disturbing impacts to vegetation would include the trampling/crushing of vegetation, the removal of vegetation, and soil compaction. Indirect effects of vegetation removal could include increased erosion, sedimentation, the potential for the spread and establishment of noxious and invasive weed species, and habitat fragmentation. Construction related surface-disturbing activities would consist of installing the tower; constructing the cable tray, equipment building, access road; and ROW clearing

for installation of the power poles and power distribution line. Long-term disturbance associated with operations includes the permanent footprint for the communication site facilities, cable tray, access road, and power poles, and disturbance for ongoing ROW maintenance.

To minimize impacts to the grassland vegetation community on the summit of Middle Bald Mountain, the access road would not extend beyond the edge of the trees, and load-spreading mats would be used for construction activities in the grassland vegetation community. For operation and maintenance activities, access to the site in the grassland vegetation community would be by foot, turf-tired UTV for special maintenance needs, and on snow when present. The route across the grassland vegetation community used to access the site would vary each time. The 7.2 kV power distribution line would be installed alongside the access road to the edge of the trees. The power line than would be buried from the edge of the trees to the equipment building. Vegetation removal during trenching for the power line between edge of the trees and the equipment building would be done using "tundra protection" procedures as described in Section 2.4 Design Criteria.

The Forest Plan addresses multiple types of existing or inventoried old growth forest, old-growth development, and old-growth retention stand polygons ("old-growth related"). Old-growth related polygons that are located within the analysis area based on the Forest Plan include inventoried old growth forest and old-growth retention stand polygons ("old-growth related"). Approximately 3 acres of inventoried old growth forest and approximately 2 acres of old growth retention areas would be impacted by the construction and operation of the power distribution line and access road. Most of the old growth acreage is within stands dominated by a mix of lodgepole pine, ponderosa pine, and Douglas-fir. Impacts to old- growth areas from construction and operation activities would be long-term.

As there are no federally listed or Forest Service Sensitive Species within the analysis area, there is no effect for federally listed species, and no impact for Forest Service Sensitive Species. There are no anticipated influence to rare species from the construction of the communication site, and access road from NFSR 517 to the site. For the power distribution line along NFSRs 300 and 517, construction ROW clearing would consist of removing vegetation along the ROW. Vegetation clearing would be done by hand within 300 feet of riparian areas, and within 100 feet of the known location of pictureleaf wintergreen along NFSR 300. During operations, vegetation management would require minimum clearance of vegetation tall enough to interfere with the power distribution line to a distance of 10 feet on either side of the centerline. Hazard trees would be removed up to a distance of 50 feet on either side of the centerline. During removal of vegetation within 100 feet of pictureleaf wintergreen, a botanist must be present to ensure that the known population is not trampled or removed during vegetation removal activities. With the implementation of the design criteria, there are no anticipated impacts to special status species from the Proposed Action.

After construction is complete, disturbed areas would be reclaimed as described in Section 2.4 Design Criteria. Disturbed areas would be left in roughened condition by equipment tracking, scarifying, or disking. A native seed mixture would be drilled into disturbed areas, with hand broadcast being used in areas not accessible to a drill. Hydromulch and an organic soil conditioner would be applied to all seeded areas. Restoration activities will conform to the Forest revegetation policy and must be approved in advance by the Forest Botanist or botanical representative.

Reclamation of the vegetation communities back to their native diversity and composition would depend on various factors such as soil mixing, timing and duration of disturbance, topography, slope, soil moisture, and precipitation. Although vegetation communities would recover at varying rates, it is estimated that overall, woody-dominated plant communities located outside the vegetation treatment areas or that are compatible with the power distribution line based on topography, species type, and habitat quality, would require at least 10 to 25 years for shrubs to recolonize the area, while re-establishment of mature woodlands would require at least 30 to 50 or more years. In areas with steep slopes and increased risk of erosion, vegetation could take longer to re-establish.

Any areas of surface disturbance in the transitional grassland vegetation community where vegetation is removed would be difficult to reclaim to pre-construction conditions. The design criteria and construction techniques would limit areas of complete vegetation removal to the extent practical.

Any erosion occurring as a result of construction activities could impact native vegetation communities. Erosion and sedimentation would be minimized through the implementation of the site-specific erosion control and impacts are anticipated to be minor.

Short-term direct impacts to vegetation would include trampling of vegetation, the loss of herbaceous vegetation in areas disturbed during construction and subsequently reclaimed. The impacts of trampling would vary greatly based on the present vegetation, but will likely be short-term and minor where root stocks are not disturbed. Long-term direct vegetation impacts would include long-term loss of vegetation associated with the permanent facilities and access roads during the life of the project, and the loss of woody vegetation in the power distribution line ROW. These long-term impacts would occur for the life of the project, and would be minor.

Following surface disturbance activities, noxious weeds and invasive species may readily colonize areas that lack or have minimal vegetation cover. It is anticipated that populations of weedy annual species (e.g., cheatgrass) could become established in localized areas for extended periods of time. In addition, linear construction surface disturbance-related activities can result in increased introduction and/or spread of noxious weeds and invasive species within adjacent areas (Gelbard and Belnap 2003; Watkins et al. 2003). Noxious and invasive weed species compete with native plants, can degrade and modify native communities, and can reduce resources for native species (e.g., moisture, soil nutrients, and light).

One noxious weed species, Canada thistle, was found in the areas proposed for surface disturbance. Disturbance in and around these areas could easily spread these species into previously undisturbed areas. Noxious weeds are both a short-term and long-term impact depending on the success of reclamation, and effectiveness of noxious weed control methods.

To minimize the spread or introduction of noxious weeds, all disturbed areas would be reseeded to minimize erosion and the invasion of noxious weeds. Disturbed areas would be seeded and mulched, using a native seed mix as soon as practical after construction activities are completed.

3.5.3.6 Preferred Alternative – Killpecker Site

Under the Preferred Alternative, impacts would include surface-disturbance activities associated with construction and operation of the communication site, access road, and power distribution line. Construction of the communication site would temporarily disturb approximately 0.3 acres of the subalpine fir/Engelmann spruce cover type; permanent footprints for communication facility components would occupy < 0.1 acre of the same cover types. Construction of the access road from NFSR 300 to the edge of the trees below the summit would temporarily disturb up to 2.4 acres of forested cover types including lodgepole pine, subalpine fir/Engelmann spruce, and mixed conifer forest; the permanent footprint for the access road would occupy approximately 0.4 acres of the same cover types.

Because vegetation clearing for ROW maintenance would occur within the established ROW for the life of the project, temporary and long-term disturbance areas for the power distribution line are the same. Approximately 28.1 acres would be disturbed for initial ROW clearing, installation of the overhead power line, and ongoing ROW maintenance. Roughly half of this acreage (13.7 acres) would be associated with the lodgepole pine cover type. Other vegetation cover types to be affected include subalpine fir/ Engelmann spruce (6.4 acres), grassland (4.2 acres), mixed conifer forest (1.9 acres), ponderosa pine (0.9 acre), aspen (0.7 acres), shrub-willow (0.2 acres), and mountain shrub (<0.1 acres). Impacts associated with construction activities would be greatest in the forested communities for the communication site, access road, and power distribution line.

Approximately 2.5 acres of inventoried old-growth forest would be impacted by the construction of the access road and overhead power distribution line. Approximately 1 acre of a designated old growth retention area would be impacted by the construction and operation of the power line, access road, and proposed tower site. Total acres of disturbance would be less for the Preferred Alternative than the Proposed Action. Direct and indirect surface impacts for the Preferred Alternative would be similar to the Proposed Action. However, there would be no impacts associated with this alternative in the transitional grassland community at the summit of Middle Bald Mountain. Impacts associated with the power distribution line paralleling NFSR 300 would be the same for the Preferred Alternative as the Proposed Action, except that distance of the power line would be shorter and disturbance acreages would be less for the Preferred Alternative.

3.5.3.7 Comparison of Alternatives

The Preferred Alternative would have fewest potential impacts to vegetation resources. This alternative would cause less overall disturbance and would impact fewer old-growth trees and old-growth retention areas. Approximately 28.1 acres would be disturbed for initial ROW clearing, compared to 31 acres of disturbance under the Proposed Action.

The Proposed Action would require trenching across the meadow for construction of the power distribution line. The Preferred Alternative would not impact the meadow. Regular access to the power line across the Middle Bald meadow would be required, even though a road would not be constructed. Potential soil and vegetation disturbance to the meadow (consisting of soil compaction and vegetation trampling) would increase with frequent access. Site access across the meadow would be pedestrian; turf-tired UTV for special maintenance needs; and over snow, when present. The access route across the meadow would be varied each time to prevent a permanent trail from becoming established.

3.5.3.8 Cumulative Effects

The cumulative effects study area (CESA) for vegetation , including noxious weeds, special status species, and wetlands, is based on the location of past and future timber and fuel projects in the analysis area (**Figure 2-8** and **Figure 2-9**). Approximately 5,000 acres of past timber and fuels project have occurred within the CESA. Additionally, within the Elkhorn Planning area, an additional 2,200 acres are planned for vegetation treatments. Other past, present, and reasonably foreseeable future actions within the CESA that can contribute to cumulative impacts on vegetation include road construction and maintenance and recreational activities on National Forest System lands.

Depending when the past projects occurred, some type of mitigation may have been required to minimize the impacts to less than significant. Past and present actions and reasonably foreseeable future actions would cumulatively reduce available vegetation cover types in the CESA until such time that reclamation is deemed successful. Successful reclamation is defined as re-establishing a sustainable vegetation community that has similar species diversity and vegetative cover compared to similar undisturbed native vegetative communities.

Minor incremental increases in cumulative impacts to vegetation resources from the proposed project alternatives potentially would include changes in numerous habitat functions including soil stability, erosion control, species biodiversity, acreage of woodlands, wildlife forage and habitat. The spread of new noxious weed species into the analysis area, or existing species into previously native habitats would be a significant cumulative impact if it occurred; however, design criteria and best management practices are in place to minimize the spread and establishment of noxious weeds.

3.6 Soils, Watershed, and Hydrology

3.6.1 Issues

Issues identified for soil and surface water resources include:

- Impacts to soil and water quality, including erosion, runoff, and stream sedimentation from construction and maintenance of the proposed power distribution line and access road.

3.6.2 Affected Environment

This section describes the affected environment for soils, watershed, and surface water resources that may be affected by the Proposed Action or alternatives for the Middle Bald Mountain Communications Site. The analysis area included the 8.5 mile by 5 mile area described at the beginning of this chapter. A smaller analysis area for disturbance to soils was defined to include a buffer distance of 50 feet surrounding all project components.

3.6.2.1 Soils

Information regarding soil characteristics was obtained from Natural Resources Conservation Service (NRCS) literature or databases, including the Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin, U.S. Department of Agriculture (USDA) Handbook 296 (USDA-NRCS 2006) and the Soil Survey Geographic Database. Soil baseline characterization for the analysis area is based on Soil Survey Geographic Database review and analyses. The Soil Survey Geographic Database is the most detailed level of soil mapping completed by the USDA-NRCS. The Soil Survey Geographic Database for Larimer County and the Roosevelt National Forest, Colorado (NRCS 2012) are the source for the soils data in this section. This investigation focused on soil characteristics or limitations of particular interest to construction of the proposed power distribution line, access road, and communication site.

Regional Overview

The analysis area is located entirely within Major Land Resource Areas 48A, the Southern Rocky Mountains Province of the Rocky Mountain System (USDA-NRCS 2006). This Major Land Resource Areas consists primarily of two belts of strongly sloping to precipitous mountain ranges trending north to south. Several basins, or parks, are between the belts. Elevation ranges from 6,500 to 14,400 feet above mean sea level (amsl). Many of the highest mountain ranges were reshaped by glaciation. Alluvial fans at the base of the mountains are recharge zones for local basin and valley fill aquifers.

The soils in Major Land Resource Areas 48A primarily formed in slope alluvium and colluvium on mountain slopes or residuum on mountain peaks derived from igneous, metamorphic, and sedimentary parent materials. Younger igneous parent materials, primarily basalt and andesitic lava flows, tuffs, breccias, and conglomerates, are located throughout this area. The dominant soil orders in this Major Land Resource Areas are Mollisols, Alfisols, Inceptisols, and Entisols. Mollisols are fertile soils with high organic matter and a nutrient-enriched, thick surface. Alfisols generally are well developed soils that show extensive profile development, with distinct argillic (clay) accumulations in the subsoil. Alfisols have at least 35 percent base saturation, meaning calcium, magnesium, and potassium are relatively abundant. In contrast, Inceptisols are weakly developed soils that have altered horizons that have lost bases or iron and aluminum but retain some weatherable minerals. Entisols are considered recent soils that lack soil development because erosion or deposition rates occur faster than the rate of soil development.

Figure 3-11 Soil Units

Table 3-7 Project Soil Characteristics (Acres)[1]

Map Unit Symbol	Map Unit Name	Map Unit Acres	Water Erodible	LRP[2]	Compaction Prone	Shallow Bedrock
16	Boyle-Ratake gravelly sandy loams, 1 to 9 % slopes	3.8	—	—	1.9	—
117	Wetmore-Boyle-Rock outcrop complex, 5 to 60 % slopes	0.3	—	—	0.1	0.1
99	Schofield-Redfeather-Rock outcrop complex, 5 to 25 % slopes	5.6	—	—	2.2	5.0
6101A	Cryaquolls-Gateview complex, 0 to 15 % slopes	1.9	—	1.0	—	—
7728A	Redfeather family, 5 to 15 % slopes	10.7	—	9.1	9.1	9.1
4704B	Bullwark-Catamount families-Rubble land complex, 5 to 40 % slopes	1.2	—	0.9	—	0.9
7702B	Goosepeak—Catamount families, moist complex, 5 to 40 % slopes	5.4	—	4.6	—	2.2
7102A	Cryaquepts-Cryaquolls complex, 0 to 15 % slopes	0.3	—	0.3	—	—
7755B	Leighcan-Catamount families, moist complex, 5 to 40 % slopes	26.0	—	10.4	—	10.4
7700B	Leighcan family, 5 to 40 % slopes	13.8	—	—	—	—
7202B	Leighcan family, till substratum-Cryaquolls complex, 5 to 40 % slopes	0.8	0.2	0.2	—	—
2703B	Cypher-Ratake families complex, 5 to 40 % slopes	3.4	—	—	—	1.4
7700C	Leighcan family, 40 to 75 % slopes	0.1	—	—	—	—
7756B	Catamount, moist-Leighcan families-Rock outcrop complex, 5 to 40 % slopes	6.7	—	2.7	—	4.1
8776B	Moran family-Lithic Cryorthents-Rubble land complex, 5 to 40 % slopes	1.6	—	0.3	—	0.3
	Total Acres	81.6	0.2	29.5	13.3	33.5

[1]Includes all impacted areas. [2]Limited reclamation potential. Source: NRCS 2014.

Soil Characteristics

Soil characteristics such as susceptibility to erosion and the potential for revegetation are important to consider when planning for construction activities and stabilization of disturbed areas. These limitations are a function of the soils physical and chemical properties as affected by climate and vegetation changes. Sensitive soils including prime farmland, hydric, highly erodible, limited revegetation potential, and other pertinent soil characteristics are described in further detail below. **Figure 3-11** illustrates the soils within the analysis area. **Table 3-7** provides a summary of the soil characteristics within the analysis area generated from the Soil Survey Geographic Database. The various soil map units within the analysis area were combined into generalized groups of soils to evaluate potential impacts and to determine effective erosion control measures, reclamation, and revegetation potential in the area.

Water erosion is the detachment and movement of soil by water. Natural erosion rates depend on inherent soil properties, slope, soil cover, and climate. Erosion prone soils were characterized as having a soil erodibility factor greater than 0.28 and slope greater than 15 percent. Wind erosion is the physical wearing of the earth's surface by wind. Wind erosion removes and redistributes soil. Wind erodible soils were characterized as having a wind erodibility group value of 1 or 2.

Soils with limited reclamation potential have chemical characteristics such as high salts, sodium, or pH that may limit plant growth. Saline soils affect plant uptake of water and sodic soils often have drainage limitations. In addition, the success of stabilization and restoration efforts in these areas may be limited unless additional treatments and practices are employed to offset the adverse physical and chemical characteristics of the soils.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing crops and that is available for these uses. These soils have the capability to be prime farmland, but may have not yet been developed for irrigated agriculture uses. The Farmland Protection Policy Act states that federal programs that contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses will be minimized and shall be administered in a manner that, as practicable, are compatible with state and local government and private programs and policies to protect farmland. No prime farmland is within the analysis area (NRCS 2014). No prime farmland or farmland of statewide importance occurs in the analysis area, therefore will be dismissed from further analysis.

Hydric soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. These soils are commonly associated with floodplains, lake plains, basin plains, and with riparian areas, wetlands, springs, and seeps. Due to the scale of mapping, small areas of hydric soils may not be captured by this dataset however; surveys indicate mapped narrow riparian wetlands occur along the power distribution line route. Section 3.5 provides further detail on wetlands and riparian areas.

In areas with a shallow depth to lithic bedrock (relative to the structure foundation excavation depth), excavation may result in rock fragments remaining on the surface at levels that would limit the success of restoration efforts. Where the power line routes or communication towers are located on soils with lithic bedrock within 60 inches of the soil surface, blasting or specialized drilling equipment may be required for installing structure foundations.

Soil compaction occurs when soil particles are pressed together and the pore spaces between them are reduced and bulk density is increased. This results in a decrease in infiltration and an increase in runoff and erosion. Moist, fine textured (clayey) soils are most susceptible to compaction. Soils with greater than 28 percent clay were interpreted as compaction prone.

Corrosion potential pertains to soil-induced chemical action that corrodes or weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors

results in a severe hazard of corrosion. For concrete, the risk of corrosion is based on soil texture, acidity, and amount of sulfates in the saturation extract (NRCS 2014).

3.6.2.2 Watersheds

Water drainages have been delineated in the United States by the U.S. Geological Survey (USGS) using a national standard hierarchical system based on surface hydrologic features (USGS 2011). Each drainage is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits, where watershed regions are the largest areas (HUC02), and subwatersheds are the smallest units (HUC12). As they become smaller they are nested within the larger units. There are four HUC12 subwatersheds that contain portions of the analysis area (**Table 3-8**). The analysis area is located within the Roaring Creek, North Fork Cache La Poudre River-Panhandle Creek, South Fork Lone Pine Creek, and North Fork Lone Pine Creek subwatersheds in Larimer County, Colorado and includes streams crossed by the power distribution line and access roads. These watershed boundaries and the streams within are illustrated on **Figure 3-12**. All of these watersheds are tributary to the Cache la Poudre River.

Table 3-8 Watersheds with Portions of the Analysis Area

Hierarchy	Watershed	Subwatershed Name
Missouri River Region	Headwaters Cache la Poudre River	Roaring Creek
South Platte River Subregion	Upper North Fork Cache la Poudre River	North Fork Cache La Poudre River-Panhandle Creek
Cache la Poudre River Basin	Lone Pine Creek	South Fork Lone Pine Creek
		North Fork Lone Pine Creek

Source: USGS 2011.

Streams within these subwatersheds include the headwaters of the North Fork Cache la Poudre River, Killpecker Creek, headwaters of Roaring Creek, and the headwaters to North and South Lone Pine creeks.

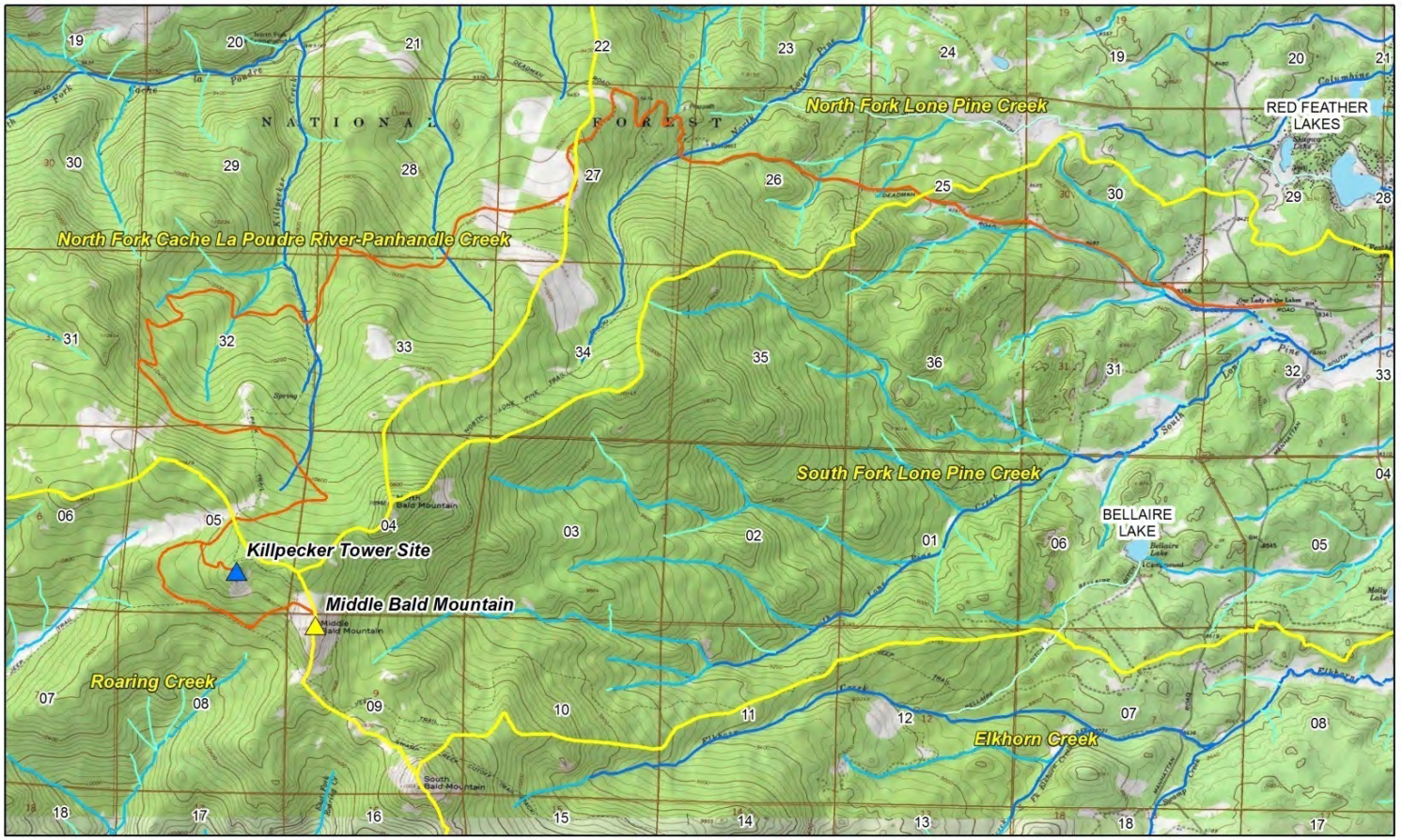
3.6.2.3 Water Quality

Federal regulations that ensure the protection of water resources include the Safe Drinking Water Act and the Clean Water Act (CWA). The Safe Drinking Water Act protects drinking water resources and requires strategies to prevent pollution. The CWA regulates pollutant discharge into streams, rivers and wetlands. The EPA has established primary and secondary standards to guarantee quality drinking water. The Colorado Department of Public Health and Environment (CDPHE) implements the standards set by the EPA and regulates the discharge of pollutants into surface and ground water and enforces the Primary Drinking Water Regulations.

Section 402 of the CWA authorizes discharges of storm water under the National Pollutant Discharge Elimination System. The state of Colorado is delegated the National Pollutant Discharge Elimination System program under the CWA and has adopted their own state Pollutant Discharge Elimination System programs. A Storm Water Pollution Prevention Plan would be prepared as part of the proposed project. The Storm Water Pollution Prevention Plan would include stabilization practices, structural practices, storm water management, and other controls.

The State of Colorado Water Quality Control Commission has designated the streams within the analysis area as Cold Water Aquatic Life Class 1, Recreation Class E, Agriculture, and Domestic Water Supply. This indicates that the waters should be capable of sustaining a wide variety of cold-water biota, including sensitive biota; are suitable for direct contact recreational activities; are suitable for direct

Figure 3-12 Watershed Boundaries and the Streams



agricultural irrigation; and are suitable for potable water supplies following standard treatment (CDPHE 2013). No streams in the analysis area have been found to have impairments to their water quality designations.

3.6.2.4 Hydrology

Stream flow patterns in the analysis area are typical of those found in snow-dominated subalpine and alpine watersheds along the Front Range of Colorado. The annual average precipitation in the Deadman Geographic Area is 18 inches.

Most stream flow comes in the form of spring runoff. Stream flow rises in April or May as snow begins to melt. Peak flows typically occur in May or June in the analysis area. Flow declines through the summer and fall. Low, stable base flow occurs through late fall and winter, until snow begins to melt again the following spring. Throughout the analysis area stream channels are predominantly pool-riffle with some low gradient, meandering, depositional channels in wetlands and meadows. Riparian wetlands and isolated forested wetlands and fens were also identified near the analysis area (see Section 3.5 for further detail on wetlands and riparian areas).

3.6.3 Environmental Consequences

3.6.3.1 Methodology

The soils and hydrology data utilized for this analysis was obtained from the NRCS Geospatial Data Gateway and USGS National Hydrography Dataset GIS layer and topographic maps.

Impact analysis will compare relative impacts between alternatives to both soil and hydrology resources. Impacts to soil and hydrology resources from the project will be identified based on the locations of the resources in relation to the proposed surface disturbance areas. For soil and hydrologic resources, proposed project activities will be spatially analyzed considering the baseline condition, project design criteria and best management practices, and applicable federal and state regulatory provisions.

Impact to soil resources from soil compaction, accelerated runoff, erosion, and soil productivity and quality will be assessed based on project related disturbance. Acres of soils and pertinent soil characteristics and limitation impacted by each alternative will be assessed based on the project footprint. Impacts to water quality from erosion, runoff, and stream sedimentation will be assessed based on the acres of disturbance within100 feet of perennial and intermittent streams, and in areas with highly-erosive soils within 100 feet of perennial and intermittent streams.

The analysis of the impacts to soil resources is based on the assumption that project design criteria and best management practices (Section 2.4) would be implemented as part of the project. These proposed measures address the erosion control; prevention of rutting and compaction; reclamation; and other practices that would minimize soil resource impacts when implemented. To minimize construction-related impacts to soil and hydrology resources, reclamation would be conducted as soon as practical following surface disturbance. Additionally, Larimer County would be required to abide by the standards and guidelines outlined in the Forest Service Region 2 Forest Plan on NFS land.

Temporary impacts to soils and hydrology resources are those that are anticipated to be short-term in nature and following construction would be reclaimed and revegetated. Long-term impacts to soils would include areas where structures, surface facilities, or long-term access roads would be located for the duration of the project. Mitigation will be proposed as necessary for hydrology and soil resources. Design criteria and best management practices will be taken into account in determining impacts.

3.6.3.2 Measurement Indicators

The following measurement indicators were used to determine impacts to soils and hydrology:

- Acres of soils and pertinent soil characteristics and limitation impacted by each alternative, based on the project footprint.

3.6.3.3 Significance Criteria

A significant impact to surface water or soils would result if any of the following were to occur from constructing or operating the project. The significance criteria will each be addressed through a combination of the hydrology and soils measurement indicators listed above.

- Alteration of the existing drainage pattern of the area that would result in off-site erosion or sedimentation; decreased streambank stability; or changes to the drainage patterns.
- Surface water impacts that would violate Section 404 of the CWA or other applicable surface water regulations, including state-established standards for designated uses.
- Accelerated erosion due to disturbance results in the formation of rills or gullies, or that result in sediment deposition in downgradient lands or waterbodies to the extent that existing uses cannot be maintained.
- Soil productivity is reduced to a level that prevents the disturbed area from recovering to pre-disturbance soil/vegetation productivity levels.
- Increases in the potential for soil creep, slumping, or mass failure.

3.6.3.4 No Action Alternative

Soils and Surface Water

Under the No Action Alternative, the Forest Service would not authorize Larimer County to construct and operate a communication site for government use in the vicinity of Middle Bald Mountain. No project related impacts to soil or surface water resources would occur. Natural and anthropogenic actions such as erosion, timber and fuels management, fire, recreation, and grazing would continue to impact soil resources at present levels in the analysis area.

3.6.3.5 Proposed Action – Middle Bald Mountain Site

Soils

Impacts to soils associated with the Proposed Action would result from construction and operation of the communication site, access road, and power distribution line. In general, impacts associated with construction of the power line would be temporary and minor to moderate in intensity. Temporary disturbances would occur within the power line ROW from construction traffic, vegetation clearing, and work areas around each structure. The communication facility, concrete pad where the tower would be constructed, and access road would result in long-term to permanent impacts to soil resources. These impacts are described in detail below. **Table 3-9** provides an assessment of the soils, characteristics, and/or limitations anticipated to be disturbed by each alternative.

Table 3-9 Soil Disturbance by Alternative

	Total Acres of Disturbance	Water Erodible	Compaction Prone	LRP[1]	Shallow Bedrock
Proposed Action Temporary Disturbance					
Communication Site	0.5	—	—	0.1	0.1
Access Road	2.1	—	—	0.9	0.9
Overhead Power Distribution Line	31.1	0.1	5.4	11.3	12.7
Proposed Action Long—term Disturbance					
Communication Site	<0.1	—	—	—	—
Access Road	0.4	—	—	0.1	0.1
Overhead Power Distribution Line	31.1	0.1	5.4	11.3	12.7
Preferred Alternative Temporary Disturbance					
Communication Site	0.3	—	—	0.1	0.2
Access Road	2.4	—	—	1.0	1.4
Overhead Power Distribution Line	28.2	0.1	5.3	10.1	11.5
Preferred Alternative Long—term Disturbance					
Communication Site	<0.1	—	—	<0.1	<0.1
Access Road	0.4	—	—	0.2	0.2
Overhead Power Distribution Line	28.2	0.1	5.3	10.1	11.5

[1]Limited reclamation potential.

Direct impacts to soil resources would result from the clearing of vegetation within the Right of Way (ROW) and blading/grading of soils during construction. Surface disturbance using equipment to remove vegetation may reduce soil productivity and alter soil development in the short-term. Although long-term soil productivity may be altered, nutrient cycling would continue due to the continual addition of leafy vegetative litter associated with grass or shrub species. Depending on the decomposition rate in the area, this could take more than 2 years to occur in areas that are subject to natural reclamation.

Grading and leveling would be required to construct the communication facility, tower, and the access road, with the greatest impacts occurring on more steeply sloping areas. During construction, the soil profiles would be mixed with a corresponding loss of soil structure. The access road would result in a long-term loss of soil quality. Indirect effects may include generation of side cast materials (loose sediment) and disruption and interception of subsurface flow of water that could alter soil moisture regimes upslope and downslope from the road. Other indirect effects may be trespass and off road use. Where surfacing and erosion controls are engineered into the road, erosion impacts would be reduced.

Soil compaction and rutting could result from the movement of heavy construction vehicles within construction areas for the power line, access road, and communication site. Wood poles for the power line would be installed with a Digger Derrick truck or rubber-tired backhoe from existing roadways paralleling the power line, to minimize soil compaction. The degree of compaction at the communication site, staging area, and temporary vehicle pullouts or turnarounds, and within the ROW for vegetation clearing would depend on the moisture content and texture of the soil at the time of construction. Compaction would be most severe where heavy equipment operates on moist to wet soils with high clay

contents. Soil compaction and a reduction in ground cover would lead to an increase in bulk density, increased runoff, and water erosion. Construction on wet or moist soils would increase the potential for compaction. Refer to **Table 3-9** for a comparison of compaction-prone soils between each alternative. In general, most of the compaction-prone soils impacted would be along the power line.

Rutting or soil mixing could occur when soils are saturated. Rutting affects the surface hydrology of a site as well as the rooting environment. The process of rutting reduces the aeration and infiltration of the soil, thereby degrading the rooting environment. Rutting may result in soil mixing of topsoil and subsoil, thereby reducing soil productivity. Rutting also disrupts natural surface water hydrology by damming surface water flows or by diverting and concentrating water flows creating accelerated erosion. Soil mixing typically results in a decrease in soil fertility and a disruption of soil structure. Compaction and rutting at the Middle Bald communication site would be minimized through the use of load-spreading mats within the meadow. Refer to **Table 3-10** for a comparison of soils prone to rutting by each alternative. Additional information is presented in **Appendix C**.

Table 3-10 Rutting Potential in the Analysis Area

Row Labels	Significant	Moderate	Slight	Grand Total
Proposed Action				
Middle Bald Access Road	2.15			2.15
Middle Bald Buried Power line	0.13		0.94	1.07
Middle Bald Mountain Tower Site			0.30	0.30
Middle Bald Overhead Power Distribution line	33.90	21.90	6.09	61.89
Cable Tray			0.27	0.27
Preferred Alternative				
Killpecker Access Road			2.53	2.53
Killpecker Overhead Power Distribution line	29.24	21.90	6.07	57.21
Killpecker Tower Site			0.30	0.30
Grand Total	**65.41**	**43.81**	**16.50**	**125.72**

This alternative would require Larimer County to cross a high elevation meadow to reach the proposed tower site. The meadow soils would be more susceptible to compaction and disturbance, due to a lack of duff, litter, and small woody debris. Compaction and rutting within the meadow would be minimized through the use of load-spreading mats. Additionally, to minimize impacts to the soils and vegetation on the summit of Middle Bald Mountain, the access road would not extend beyond the edge of the trees. For operation and maintenance activities, access to the site across the meadow would be pedestrian; turf-tired UTV for special maintenance needs; and over snow, when present. The route across the meadow to access the site would be varied each time, to prevent a permanent trail from becoming established. The 7.2 kV power distribution line would be installed beside the access road, up to the edge of the trees. The power line than would be buried from the edge of the trees to the equipment building. Trenching for the power line between the edge of the trees and the equipment building would be done using “tundra protection” procedures, as described in Section 2.4 Design Criteria. Surface soils and vegetation would be removed intact, to the extent possible and replaced when the work is complete.

The potential for accelerated erosion would increase through the loss of vegetation cover and increases in bulk density as compared to an undisturbed state. Although accelerated erosion due to construction-related soil disturbance could occur at any stage of construction, the maximum potential for erosion would be expected when soils are disturbed or loose, in spoil piles, or where there is a lack of soil cover protecting the surface of the soil. Reclamation and erosion control would be difficult on soils that occur on steeper sloping areas (15 percent or more), particularly those steeper sloping areas with shallow soils (20 inches or less to bedrock). Water erosion prone soils crossed by the alternatives are shown in **Figure 3-13**. A site-specific erosion control plan will be provided to the Forest Service for approval by the Forest Hydrologist prior to commencement of construction. Refer to **Table 3-9** for a comparison of erosion-prone soils between each alternative.

Soil contamination, while unlikely, could result from material spills during construction. Saturated soils may have the potential to diffuse contaminants. Overland flow of contaminants could occur if large spills of fuel or other contaminants were to occur. Impacts to wetlands and waterbodies would be minimized by the implementation of project design criteria requiring avoidance of wetlands and waterbodies and a Spill Prevention, Control and Countermeasure (SPCC) plan. See Section 3.5 for further information on wetlands.

Surface Water

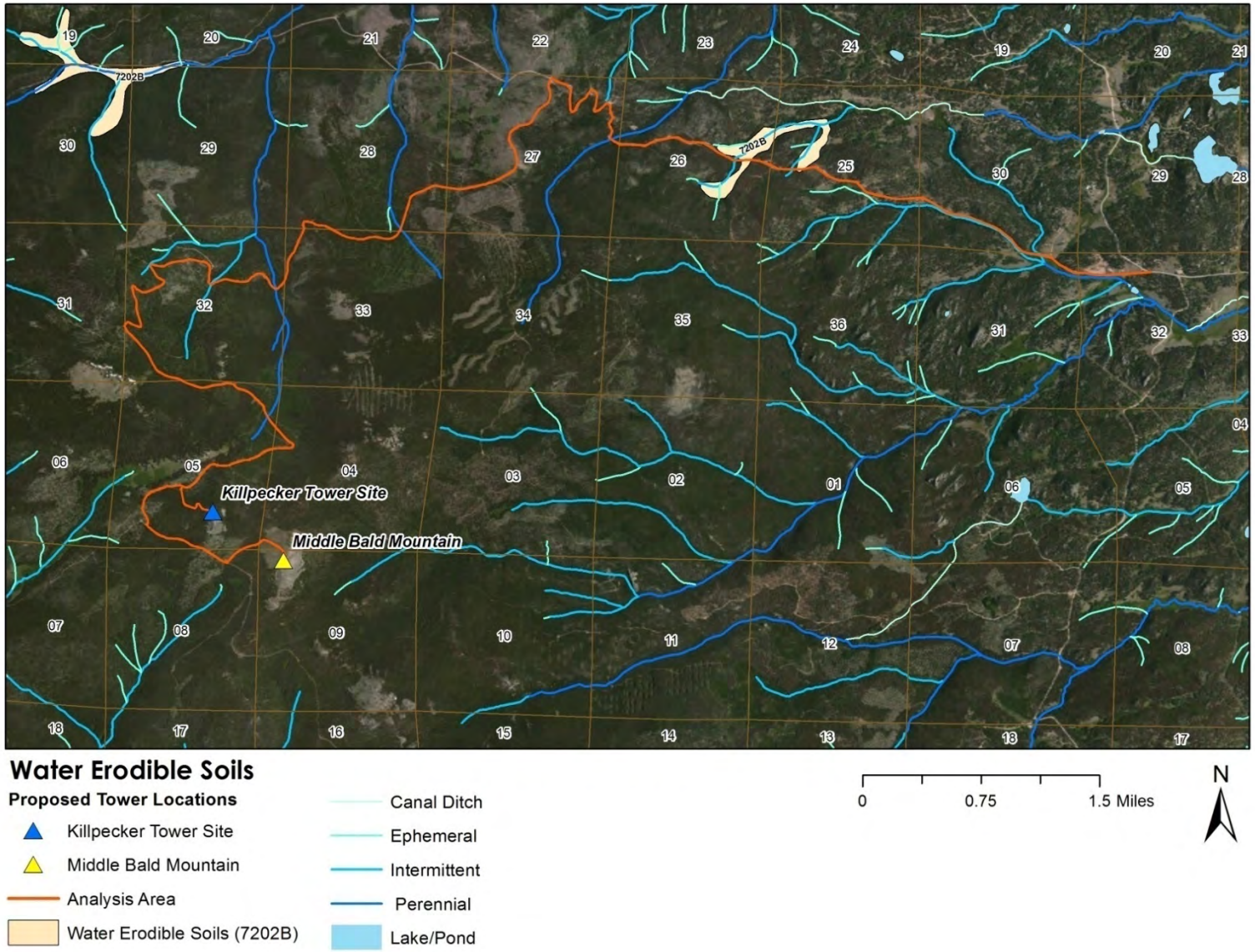
Potential effects on streams, and the watersheds that contribute to them, could result from increased runoff and accelerated water erosion along roads and at stream crossings. Existing roads, such as NFSR 300 and NFSR 517, would experience heavier traffic, which could further concentrate runoff along vehicle tracks thus increasing sediment delivery to streams. Construction of the power distribution line and access road would reduce canopy cover and increase the amount of bare ground and loose soil. All of these factors could increase the sediment and runoff directed into streams. The potential for this would be avoided or reduced by implementation of Larimer County's proposed site-specific erosion control plan, project design criteria, and other best management practices, as described in Section 2.4.

In accordance with CWA Section 402, an approved permit from the state would be required for the project under the General Permit for Stormwater Discharges Associated with Construction Activities from the CDPHE. Compliance with the provisions under this permit would minimize and mitigate surface water impacts from storm water runoff or snowmelt. Any impacts that might occur after the implementation of design criteria and best management practices, and compliance with permit provisions, would be less than significant, short-term direct impacts.

Additional impacts to surface water could occur from spills or leaks of fuel or lubricants. Implementation of project design criteria and best management practices would reduce these impacts through the development of, and adherence to, a SPCC that would require appropriate containment measures; any remaining impacts would be short-term direct impacts and would be less than significant.

As stated in Section 2.4.1, Design Criteria, wetland and waterbody surveys would be conducted prior to construction in areas to be disturbed for the power distribution line along NFSR 300. All wetlands and waterbodies would be strictly avoided. No surface disturbance (including overland vehicle travel) would occur within wetland or riparian areas. All vegetation thinning within riparian or wetland areas would be completed by either by hand or from the road. If wetlands and waterbodies cannot be avoided, consultation with the Forest Service to determine additional mitigation would be required. Features identified as jurisdictional during surveys would require consultation with the USACE. If during consultation with the USACE, it is determined that jurisdictional waters occur within the analysis area, a Section 404, Nationwide Permit 12 – Utility Line Activities would likely apply to the construction of the power line structures, foundations, access roads, and temporary structures or work needed to complete the project (Federal Register, Vol. 77, No. 34, part III, February 21, 2012).

Figure 3-13 Water Erodible Soils



One area of severely erodible soils occurs along the power distribution line. Approximately ten unnamed ephemeral and intermittent creeks would be crossed by the power line. These creeks flow into South Lone Pine and Columbine Creeks. Based on design criteria described in Section 2.4.1, disturbance within 100 feet of perennial and intermittent streams would be prohibited. This design criterion would avoid potential impacts to surface waters.

3.6.3.6 Preferred Alternative – Killpecker Site

Soils

Impacts associated with the Preferred Alternative would include surface-disturbance activities associated with construction and operation of the communication site, access road, and power distribution line. The impacts to soil resources would be similar to those described for the Proposed Action except that there would be an approximately 8% to 9% reduction in temporary and long-term surface disturbance for the Preferred Alternative compared to the Proposed Action. Overall, this alternative would substantially impact less compaction-prone soils; limited reclamation potential soils; and soils with shallow bedrock, because the Preferred Alternative would not impact the subalpine/alpine meadow, compared to the Proposed Action. **Table 3-9** provides a comparison of the soils, characteristics, and/or limitations anticipated to be disturbed by the Preferred Alternative and the Proposed Action.

Impacts from the Preferred Alternative would include surface-disturbance activities associated with construction and operation of the communication site, access road, and power distribution line. The impacts to surface water would be similar to those described for the Proposed Action. Approximately 10 unnamed ephemeral and intermittent creeks would be crossed by the power line. These creeks flow into South Lone Pine and Columbine creeks. Based on design criteria described in Section 2.4.1, disturbance within 100 feet of perennial and intermittent streams would be prohibited. This design criterion would avoid potential impacts to surface waters. Project use of the road and construction of the power line would not extend beyond the Killpecker site, eliminating any disturbance between the Killpecker site and the Middle Bald Tower Site.

3.6.3.7 Comparison of Alternatives

Soils

The Preferred Alternative would have the least impacts to soil resources. This is due in part to the fact that there would be less overall soil disturbance under this alternative. The Preferred Alternative also would impact less compaction-prone; limited reclamation potential; and shallow bedrock soils, because it would not cross a high-elevation meadow to reach the tower site.

The Proposed Action would require trenching across a high-elevation meadow to construct the power distribution line. A road would not be constructed across the meadow; however, regular access would be required. The potential for soil and vegetation disturbance to the meadow (consisting of soil compaction and vegetation trampling) would increase with frequent access. Site access across the meadow would be pedestrian; turf-tired UTV for special maintenance needs; and over snow, when present. The access route across the meadow would be varied each time to prevent a permanent trail from becoming established.

Surface Water

Because the two alternatives only differ slightly between the tower site locations and new access needed to those sites, there are no appreciable differences in impacts to water resources. The number of stream crossings would be the same under either alternative.

3.6.3.8 Cumulative Effects

The CESA for soil and surface water is a buffer of 100 feet along the power distribution line, access road, and communication site. The past and present actions and reasonably foreseeable future actions that may have environmental consequences on soil resources include:

- Construction and maintenance of Deadman Road, NFSR 300, and NFSR 517.
- Issuance of a public road easement to Larimer County for Deadman Road.
- Land exchange with Crystal Lakes Development Corporation resulting in acquisition of 80 acres of land by the U.S. Government in sections 23 and 24 (T10N, R74W). Mineral rights are reserved to Union Pacific Railroad.
- Right-of-way irrigation ditch easement for the Mitchell Ditch (T10N, R74W, sections 25 and 26).
- Timber sales, salvage logging, timber stand improvement, and hazard tree removal projects as identified in **Table 2-3**.

Approximately 5,000 acres of past timber and fuels project have occurred within the CESA. Additionally, within the Elkhorn Planning area, an additional 2,200 acres are planned for vegetation treatments. Other past, present, and reasonably foreseeable future actions within the CESA that can contribute to cumulative impacts on soil and surface water include road construction and maintenance, and recreational activities on National Forest System lands. All of these projects have had or would have the potential to create disturbance to soil and surface water resources increasing the potential for soil compaction, a short-term reduction in soil productivity, accelerated runoff, erosion, and sedimentation to waterbodies. These projects have or would undergo NEPA analyses, be implemented according to project design criteria and best management practices, and/or be conducted according to other local, state, and federal regulatory approvals and provisions. In general, cumulative impacts to soil and water resources would be short-term and minor to moderate in intensity.

3.7 Wildlife

3.7.1 Issues

- Impacts to avian species protected by the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) from collisions with and/or electrocution by the proposed overhead power distribution line and/or the proposed or alternative tower.
- Impacts to affected Federal or State Threatened or Endangered species (TES), Forest Service sensitive species (FSS), and management indicator species (MIS) from construction, operations, and maintenance of the proposed or alternative communication site tower and proposed power distribution line.

3.7.2 Affected Environment

Table 3-11 displays all federally threatened, endangered, or proposed species listed under the Endangered Species Act (ESA). **Table 3-12** displays all Forest Service sensitive and management indicator species (MIS), that may occur on or could be affected by actions on the Canyon Lakes Ranger District and that currently require consideration for effects. Prairie grassland wildlife species that occur only on the Pawnee National Grassland and do not occur on the District have been excluded. A project-specific threatened, endangered, and proposed species list for the Middle Bald Mountain Area Communication Site project area was obtained from the U.S. Fish and Wildlife Service's (FWS) Information, Planning, and Conservation System (IPAC) on-line tool (www.fws.gov/ipac) on June 2, 2014. IPAC is recognized by FWS as an appropriate means of identifying listed species for project areas. A copy of the IPAC documentation can be found in this project file.

A pre-field review was conducted of available information to assemble occurrence records, describe habitat needs and ecological requirements, and determine whether field reconnaissance is needed to complete the analysis for this project. Sources of information included USFS GIS data, the Colorado Natural Heritage Program (CNHP) database (CNHP 2007), and publicly available research from federal and state wildlife agencies. Field surveys were conducted for the project area in 2007 (BMEC 2007).

No further analysis is needed for species that are not known or suspected to occur in the project area, for which no suitable habitat is present, or if the Project does not involve water depletions for relevant species. The following tables document the rationale for excluding a species, and species noted as excluded will not be discussed further in this document.

Only summary habitat and species information is provided in this EIS. For additional natural history and analysis information about any Threatened, Endangered, Proposed, Sensitive, or Management Indicator species discussed in this chapter, see the Biological Evaluation Report in the Project Record.

Table 3-11 Threatened, Endangered, and Proposed Species Considered for the Middle Bald Mountain Area Communication Site Project

Species Name	Status	Species to be Carried Forward for Detailed Analysis
Canada lynx (Lynx canadensis)	Federally Threatened	Yes
Wolverine (Gulo gulo)	Proposed Federally Threatened	Yes
Preble's meadow jumping mouse *(Zapus hudsonius preblei)*	Federally Threatened	No. Project area is above the upper elevation range (7,600 feet) of this species.
Mexican spotted owl *(Strix occidentalis lucida)*	Federally Threatened	No. Suitable habitat does not occur within the project area.
Black-Footed ferret *(Mustela nigripes)*	Federally Endangered	No. Suitable habitat does not occur within the project area.
[1]Whooping crane (*Grus americana)*	Federally Endangered	No. No water depletions are anticipated.
[1]Least tern (interior population) (*Sterna antillarum*)	Federally Endangered	No. No water depletions are anticipated.
[1]Piping plover (*Charadrius melodus*)	Federally Threatened	No. No water depletions are anticipated.
Greater sage grouse *(Centrocercus urophasianus)*	Federal Candidate	No. Suitable habitat does not occur within the project area.
Greenback Cutthroat trout (Oncorhynchus clarki stomias)	Federally Threatened	No. Suitable habitat does not occur within the project area.
[1]Pallid sturgeon *(Scaphirhynchus albus)*	Federally Endangered	No. No water depletions are anticipated.
Ute Ladies' Tresses Orchid (*Spiranthes diluvialis*)	Federally Threatened	No. The project area is above the elevational range for this species.

Species Name	Status	Species to be Carried Forward for Detailed Analysis
Colorado Butterfly Plant (*Gaura neomexicana* var. *coloradoensis*)	Federally Threatened	No. The project area is above the elevational range for this species.
North Park phacelia *(Phacelia formosula)*	Federally Threatened	No. Suitable habitat does not occur within the project area.
[1]Western Prairie Fringed Orchid *(Platanthera praeclara)*	Federally Threatened	No. No water depletions are anticipated.

[1] Water depletion projects in the Platte River system may affect these species.

3.7.2.1 Threatened, Endangered and Proposed Species

Canada Lynx. The Canada lynx is considered critically imperiled in Colorado (NatureServe 2013). Currently, there are no known resident lynx on the Canyon Lakes District. However, there have been radio-collared lynx detected by CDOW on multiple occasions within the Canyon Lakes District boundaries since the reintroduction project began, a lynx was photographed near Cameron Pass during winter 2009, and a few lynx are known to be resident within the Sulphur Ranger District boundaries.

The majority of the project area, with the exception of 14 acres along Deadman Road, is located within the Redfeather Lynx Analysis Unit (LAU; the land area units used by FWS). The Arapaho and Roosevelt National Forests and Pawnee National Grassland (ARP) lynx habitat data identifies anything above 9,000 feet elevation as potential lynx habitat, and that elevation defines the boundaries of the LAUs. Suitable lynx habitat is present within the mesic lodgepole pine and mixed lodgepole/spruce-fir forest types in the upper elevations of the majority of the power line corridor and the project area (personal communication with D. Oblerag, February 19, 2014). From ARNF GIS data, the Redfeather LAU contains 106,960 acres, of which 82,417 acres are currently suitable lynx habitat. Approximately 35 acres of the Redfeather Lynx LAU would be impacted.

Lynx have not been documented in the project area No lynx critical habitat has been designated by USFWS on the ARNF or in Colorado, and there are no key lynx linkages within the analysis area. The impacts related to the removal of suitable lynx habitat meet the direction for allowable Human Use projects in the Southern Rockies Lynx Amendment (SRLA) Implementation Guide.

North American Wolverine. The North American Wolverine became a federal candidate species December 14, 2010. On February 1, 2013, the U.S. Fish and Wildlife Service announced a proposal to list the wolverine as a threatened species under the Endangered Species Act. The wolverine is considered critically imperiled in Colorado.

The first confirmed wolverine sighting in Colorado since 1919 was recorded in June of 2009 in northern Colorado, just south of the Wyoming state line. The wolverine was observed at 10,500 feet elevation and is believed to be a part of the Greater Yellowstone Wolverine Program. This individual (M56) remains in northern Colorado (Inman et al. 2009).

One historic occurrence from 1973 has been recorded within the vicinity of the project area (CNHP 2007), and suitable habitat exists within the project area. Based on the natural history of the species, the wolverine has the potential to utilize all habitats impacted by the Project. Designated critical habitat has not been proposed for wolverine.

3.7.2.2 Sensitive Species

Table 3-12 Forest Service Sensitive Species and Management Indicator Species (MIS) Considered for the Middle Bald Mountain Area Communication Site Project

Species Name	Status	Species to be Carried Forward for Detailed Analysis
Gray Wolf (*Canis lupus*)	Forest Sensitive	Yes.
American marten (*Martes americana*)	Forest Service Sensitive[1]	Yes
North American river otter (*Lontra canadensis*)	Forest Service Sensitive	No. Suitable habitat does not occur within the project area.
Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*)	Forest Service Sensitive and MIS	No. Suitable habitat does not occur within the project area.
Pygmy shrew (*Sorex hoyi montanus*)	Forest Service Sensitive	Yes
Fringed myotis (*Myotis thysanodes*)	Forest Service Sensitive	Yes
Townsend's big-eared bat (*Corynorhinus townsendii*)	Forest Service Sensitive	Yes
Hoary bat (*Lasiurus cinereus*)	Forest Service Sensitive	Yes
Bald eagle (*Haliaeetus leucocephalus*)	Forest Service Sensitive	No. Suitable habitat does not occur within the project area.
American peregrine falcon (*Falco peregrinus anatum*)	Forest Service Sensitive	No. Suitable habitat does not occur within the project area.
Northern goshawk (*Accipiter gentilis*)	Forest Service Sensitive	Yes
Northern harrier (*Circus cyaneus*)	Forest Service Sensitive	No. Suitable habitat does not occur on Forest Service lands within the project area.
Flammulated owl (*Otus flammeolus*)	Forest Service Sensitive	Yes
Boreal owl (*Aegolius funereus*)	Forest Service Sensitive	Yes
Lewis' woodpecker (*Melanerpes lewis*)	Forest Service Sensitive	Yes
Olive-sided flycatcher (*Contopus borealis*)	Forest Service Sensitive	Yes
Black swift (*Cypseloides niger*)	Forest Service Sensitive	No. Suitable habitat does not occur within the project area.
Purple martin (*Progne subis*)	Forest Service Sensitive	No. Project area is outside of the current species range in Colorado.
White-tailed ptarmigan *(Lagopus leucurus*)	Forest Service Sensitive	No. Alpine habitat within the project area is too limited in area extent to provide suitable habitat.
Boreal toad (*Anaxyrus boreas*	Forest Service Sensitive	Yes. Suitable habitat (beaver ponds) exists

Species Name	Status	Species to be Carried Forward for Detailed Analysis
boreas)	and MIS	within the project area.
Northern leopard frog (*Lithobates pipiens*)	Forest Service Sensitive	Yes
Wood frog (*Lithobates sylvatica*)	Forest Service Sensitive	No. Project area is outside of the current species range in Colorado.
Hudsonian emerald (*Somatochlora hudsonica*)	Forest Service Sensitive	No. Project area is outside of the current species range in Colorado.
Arapahoe snowfly (*Capnia Arapahoe*)	Forest Service Sensitive	No. The entire project area is outside the elevation range for this species.
Elk (*Cervus elaphus*)	MIS	Yes
Mule deer (*Odocoileus hemionus*)	MIS	Yes
Golden-crowned kinglet (*Regulus satrapa*)	MIS	Yes
Hairy woodpecker (*Picoides villosus*)	MIS	Yes
Mountain bluebird (*Sialia currucoides*)	MIS	Yes
Pygmy nuthatch (*Sitta pygmaea*)	MIS	Yes
Warbling vireo (*Vireo gilvus*)	MIS	Yes
Wilson's warbler (*Wilsonia pusilla*)	MIS	Yes

[1] Current Forest Service sensitive species from revised August 2013 Regional Forester's list.

Gray wolf. Once distributed statewide, the wolf is presumed extirpated from Colorado (CPW 2014). Wolves occupy a wide range of habitats, and suitable habitat exists within the project area. However, no known den sites or individual occurrences of gray wolves have been documented within or adjacent to the project area. Based on the natural history of the species, the gray wolf has the potential to utilize all habitats impacted by the Project.

American marten. Marten occur throughout Alaska, Canada, and the lower 48 states except for the Midwest and the South. In Colorado, marten occur in most areas of coniferous forest habitat in the high mountains (Armstrong et al. 2011). According to NatureServe Explorer (2012), marten populations are apparently secure. This species has not been documented within the project area, but suitable habitat exists. Based on the habitat description for this species, approximately 67 acres of suitable habitat exists within the project area.

Pygmy shrew. Considered imperiled in Colorado, pygmy shrews have relatively unknown status, trend, and distribution, other than historically documented occurrences in Grand, Gunnison, and Larimer counties (NatureServe Explorer 2012). A specimen was collected in 1961 west of Fort Collins and another specimen was found near Rabbit Ears Pass (Armstrong et al. 2011). Until recently, all captures of this species in Colorado have occurred above 9,600 feet elevation (Natural Diversity Information System, NDIS 2010). However, several pygmy shrews have been captured on the Routt and Arapaho-Roosevelt National Forests by Colorado Natural Heritage Program researchers during 2012 and 2013. Captures were in a variety of habitats between elevations of 8,300 to 10,120 feet, including lodgepole

pine and spruce-fir forest (D. Oberlag, Canyon Lakes RD Wildlife Biologist, personal communication). The species has been found in subalpine forests, clear-cut and selectively logged forests, forest-meadow edges, boggy meadows, willow thickets, aspen-fir forests, and subalpine parklands (Armstrong et al. 2011; NatureServe Explorer 2012).

Fringed myotis. In Colorado, the fringed myotis is a species of coniferous woodlands and shrublands at elevations up to approximately 8,500 feet, the highest elevation for which this species has been captured on the Canyon Lakes RD. Xeric woodlands (ponderosa pine, oak, and pinyon-juniper) appear to be the most commonly used habitat type. Suitable tree roosting habitat consists of largely late-successional pine with high densities of snags in early to medium stages of decay (Keinath 2004). This species has not been documented within the project area, but suitable habitat exists. Based on the habitat description for this species, potential occurrence within the project area would be limited to roosting and foraging habitat along northeast portions of the distribution line. Hibernacula and maternity sites are most common in abandoned buildings, caves, and mines, none of which are known to occur in the project area. This species also uses bridges and rock crevices as solitary day roosts and night roosts, and they may hibernate in crevices. They regularly roost under bark and inside tree hollows, particularly in ponderosa pine and Douglas-fir in medium stages of decay.

Townsend's big-eared bat. Considered Imperiled in Colorado (NatureServe 2005). In Colorado, it occurs over most of the western two-thirds of the state and extreme southeastern Colorado to elevations of about 9,500 feet (Fitzgerald et al. 1994). From the Colorado Natural Heritage Program database, occurrences of this species are not documented within the analysis area. Based on the habitat description for this species, potential occurrence within the project area would be limited to the conifer stands of ponderosa pine, mixed Douglas-fir/ponderosa, lodgepole pine, and the riparian areas along the perennial and intermittent streams along portions of the distribution line. These areas provide foraging habitat. No caves or abandoned mines, which provide primary critical roosting habitat (maternity and hibernacula), are known within the project area.

Hoary bat. According to CNHP conservation status rankings, the hoary bat is considered "demonstrably widespread, abundant, and secure" in Colorado. In Colorado, the hoary bat probably occurs statewide from the plains to timberline (Ellison et al. 2003; Fitzgerald et al. 1994). In recent years, hoary bats have been trapped by bat researchers on the Canyon Lakes Ranger District in at least six locations at elevations between approximately 5,260 to 8,600 feet, although none of these detections are from within the project area. Based on the habitat description for this species, hoary bats could occur in all forest types along the distribution line and access road corridors where mature trees are present for roosting.

Northern goshawk. Considered vulnerable in Colorado, the northern goshawk occurs throughout North America and circumpolar through Europe and Asia (NatureServe Explorer 2012). Northern goshawks occur at elevations of 7,500 to 11,000 feet (Kennedy 2003; NatureServe Explorer 2012) and 64 percent of North American Breeding Bird survey observations occurred in coniferous forests. The species inhabits mature forests of various cover types including aspen, lodgepole, ponderosa pine, and spruce-fir. Regardless of the cover type, northern goshawks require large blocks of forest for nesting and foraging. According to Hoover and Wills (1987), goshawks may utilize all structural stages of spruce-fir, lodgepole pine, Douglas-fir, and aspen habitats for foraging year-round. The goshawk may occur throughout the project area; however, no goshawk nest sites or individuals were identified during the surveys conducted for the project area in 2007 (BMEC).

Flammulated Owl. Apparently secure in Colorado (NatureServe 2004), the flammulated owl is now thought to occur more widely than previously thought The owls are present in the ponderosa pine and Douglas-fir forests of the ARNF (Hayward and Verner 1994) and confirmed summer breeding does occur in Larimer County (Andrews & Righter 1992). Flammulated owls have been detected in several fuels reduction analysis areas on the District. This owl appears to be relatively common on the District within mature ponderosa pine and mixed conifer stands. These owls occur regularly from 6,000 to

10,000 feet elevation and prefer old growth or mature ponderosa pine. This habitat type occurs throughout much of the project area with elevations above 10,000 feet limited to the far western portion of the project area in the immediate vicinity of the Middle Bald and Killpecker tower sites. Key habitat features seem to be the presence of larger trees and snags, scattered clusters of shrubs or saplings, clearings, and a high abundance of nocturnal arthropod prey (Colorado Partners in Flight 2002).

Boreal Owl. Considered imperiled in Colorado, boreal owls occupy a circumpolar distribution in northern hemisphere boreal forests. Boreal owls appear to be distributed in Colorado between 9,200 and 10,400 feet elevation, which is limited to the western half of the project area (Hayward and Verner 1994). In Colorado, boreal owls utilize late-successional, multi-layered habitats of spruce-fir and lodgepole pine interspersed with meadows. These owls also may be found in aspen and mixed conifer stands. Boreal owls are secondary cavity nesters, usually occupying cavities excavated by woodpeckers. Nest cavities are commonly found in snags with a diameter of at least 10 inches and may be used in consecutive years. Suitable habitat has been identified within the study area. Owl call surveys conducted on August 16 and October 2, 2007, yielded no responses from owls (BMEC 2012). However, it should be noted that the timing of the owl surveys was not optimal; they are best conducted in late winter, spring and early summer.

Lewis' woodpecker. Apparently secure in Colorado (Nature Serve 2005), historic occurrences of this species are documented north of the Cherokee Park Road and west of Estes Park. Additionally, a single adult was observed along the Cherokee Park Road on July 9, 2009. This species' distribution closely matches that of ponderosa pine in the western U.S. (Abele et al. 2004). It normally occurs only in very open pondersoa pine habitats (i.e.pine savannah types), and typically does not occur in even moderately dense pine forest. This type of habitat is primarily located in the lower elevation areas near Red Feather Lakes.

Olive-sided flycatcher. Olive-sided flycatcher breeding habitat occurs throughout the U.S. and Canada. In Colorado, olive-sided flycatchers breed in coniferous forest habitat from 7,000 feet to 11,000 feet and may occur throughout the project area (Kingery 1998). In Larimer County, olive-sided flycatchers are considered rare to uncommon in the lower mountains and foothills.

Boreal toad. The boreal toad occurs in wet areas of the montane and subalpine zones from about 8,500 to 11,500 feet elevation (Campbell 1970). The boreal toad historically occurred throughout most of the mountainous portions of Colorado except the Sangre de Cristo Range, Wet Mountains, and Pikes Peak area (Hammerson 1999). Adults generally are near water during the day, but may move farther from water to forage at night (Hammerson 1999). Boreal toads breed in any body of water lacking a strong current and with gradually descending banks at some point around the perimeter (Loeffler 1998), and often in marshy areas with emergent vegetation and/or shrubby willows (Hammerson 1999. Surveys conducted in 2012 did not detect any individuals within the project area (BMEC 2012). However, potential suitable habitat including beaver ponds and side channels containing still water associated with a tributary of the South Lone Pine Creek was identified near the northeastern corner of the project area (BMEC 2012). Based on the habitat description for this species, potential occurrence within the project area would be limited to suitable surface waterbodies located along portions of the distribution line along the lower Deadman Road, as described above.

Northern leopard frog. The northern leopard frog occurs in Colorado in a variety of wetland habitats. Northern leopard frogs are a highly aquatic species and are usually found in close association with the banks and shallow water areas of permanent marshes, ponds, streams, lakes, and reservoirs. Water bodies with rooted aquatic vegetation are preferred, although adult frogs can disperse into moist, grassy meadows away from aquatic habitat to forage during the summer months (Hammerson 1999). Suitable habitat exists in beaver ponds and side channels containing still water associated with a tributary of the South Lone Pine Creek near the northeastern corner of the project area (BMEC 2012). Based on the habitat description for this species, potential occurrence within the project area would be limited to

suitable surface waterbodies located along portions of the distribution line along the lower Deadman Road, as described above.

Common to both Boreal toad and Northern leopard frog. Proper functioning condition surveys were conducted along the proposed power distribution line route by BMEC in September 2007. Field surveys for wetlands and potential waters of the U.S. were conducted along the Proposed Action access road and tower site October 2012 by AECOM field staff. Field reconnaissance surveys were conducted by AECOM field staff along the Killpecker site proposed access road and tower site in November 2013.

Within the project area, three perennial streams, and multiple intermittent and ephemeral channels were identified. Most of the identified streams would be crossed by the proposed power distribution line. No riparian areas or waterbodies are located along the Proposed Action access road or at that proposed tower site, although, the originally-proposed access road to the Middle Bald Mountain site crossed a wetland (fen). As a result, that access road was relocated and the new proposed Middle Bald Mountain site access route is relocated away from the wetland (fen) so project activities would avoid any wetland habitat disturbance. No riparian areas or waterbodies are located along the Preferred Action access road or at that proposed tower site.

As stated in the Design Criteria (Chapter 2, Section 2.4), wetland and waterbody surveys would be conducted prior to construction in areas to be disturbed for the power line along NFSR 300. All wetlands and waterbodies would be strictly avoided, and disturbance within 100 feet of perennial and intermittent streams would be prohibited. No surface disturbance (including overland vehicle travel) would occur within wetland or riparian areas. All vegetation thinning within riparian or wetland areas would be completed by hand or from the road. If it is found that wetlands and/or waterbodies cannot be avoided, consultation with the Forest Service would be required to determine additional mitigation or required permitting.

3.7.2.3 MANAGEMENT INDICATOR SPECIES

Elk. In Colorado, elk range covers the western two-thirds of the state, generally at elevations above 6,000 feet, although they are occasionally reported in the South Platte River drainage on the eastern plains (Armstrong et al. 2011). Considered generalist feeders, elk are both grazers and browsers. In the northern and central Rocky Mountains, grasses and shrubs compose most of the winter diet, with grasses becoming of primary importance in the spring months. Forbs become increasingly important in late spring and summer, and grasses again dominate in the fall. Forbs tend to be favored on drier sites, but browse is preferred in most mesic areas including aspen stands, willow communities, and moist meadows.

Sensitive elk ranges in the project vicinity are detailed in **Table 3-13** and mapped in **Figure 3-14**. Colorado Parks and Wildlife (CPW) defines summer range as that part of the range of a species where 90 percent of the individuals are located between spring green-up and the first heavy snowfall, or during a site-specific period of summer as defined for each Data Analysis unit (DAU). Production areas are part of the overall range of elk occupied by the females from May 15 to June 15 for calving.

Figure 3-14 Sensitive Elk Ranges within the Middle Bald Mountain Project Area

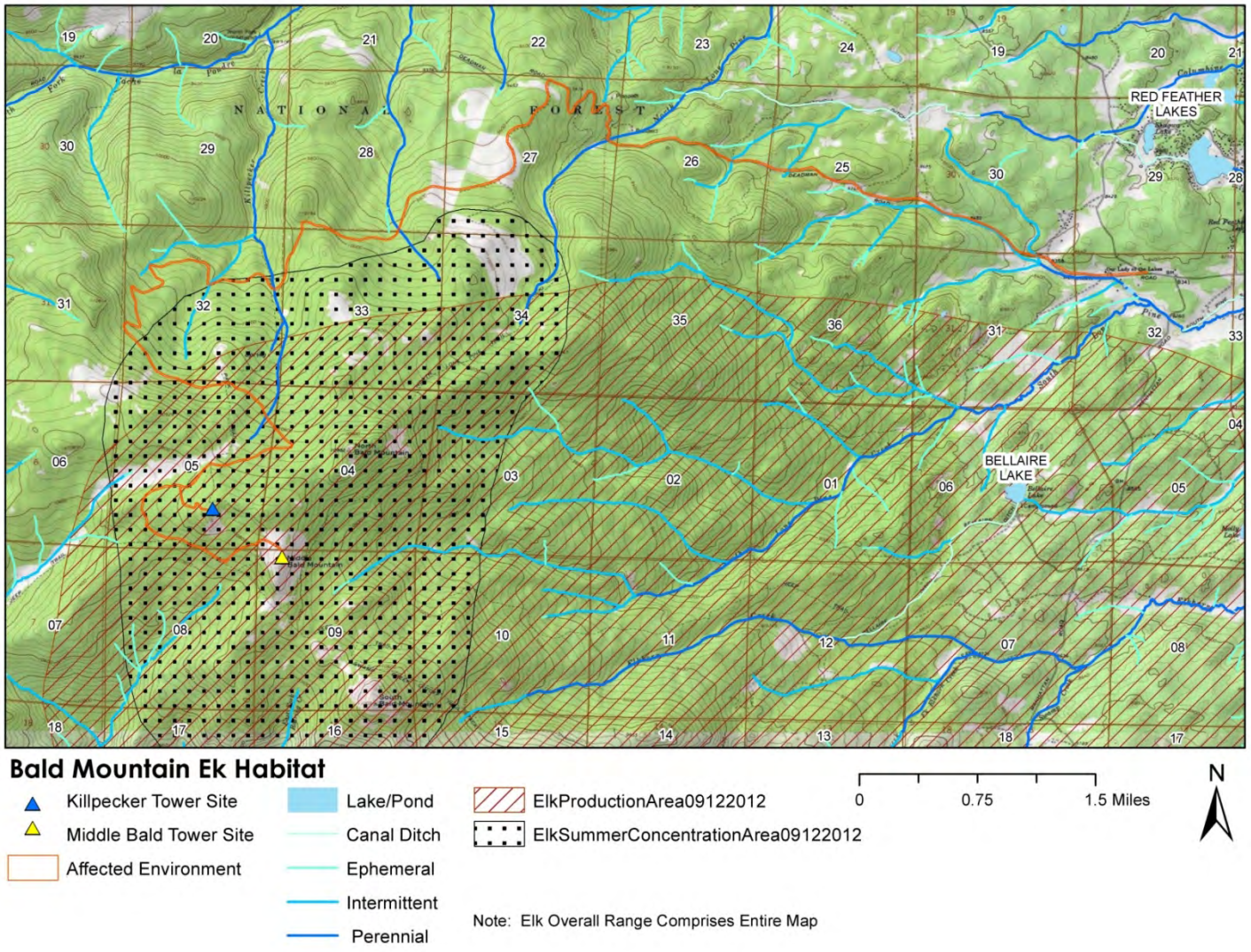


Table 3-13 Sensitive Elk Ranges in the Project Vicinity

Elk Range Type	Acres
Production Areas	22.3
Summer Concentration Areas	27.5

Field surveys indicated that the upland meadow and mountain shrub habitats provide the highest-quality forage areas for elk within the project vicinity. Depending on tree canopy cover, forage also is present within forested stands in the form of shrubs, grasses, and herbaceous species, Elk are an MIS for young to mature forest structural stage habitats for the ARNF (USDA Forest Service 1997) and can be found throughout the project area.

Mule deer. NDIS big game range mapping shows the entire Project to be within summer range for mule deer (NDIS 2012). CPW definition for mule deer summer range is the same as that provided for elk in the previous section. Field surveys indicated that the upland meadow and mountain shrub habitats provide the highest-quality forage areas for mule deer within the project vicinity. Depending on tree canopy cover, forage also is present within forested stands in the form of shrubs, grasses, and herbaceous species. Mule deer are an MIS for young to mature forest structural stage habitats for the ARNF (USDA Forest Service 1997) and can be found throughout most of the project area.

Golden-crowned kinglet. The golden-crowned kinglet is apparently secure in Colorado. Golden-crowned kinglets are most commonly found in spruce/fir forests, but they apparently have a very limited presence in Douglas-fir, lodgepole pine, and ponderosa pine forests. They breed primarily in dense coniferous interior forests, especially where spruce is present, tolerate little change on nesting grounds (Kingery 1998, 1997 Revised Forest Plan, FEIS, Appendix G, page 15), and winter in coniferous forests (occasionally in deciduous woodland scrub and brush). While suitable nesting and foraging habitat is present within or adjacent to the proposed project area in the spruce-fir and mesic lodgepole pine habitats, Golden-crowned kinglets are a fairly uncommon summer resident on the ARNF. This appears to be especially true for the Canyon Lakes District, as this species has not been detected during breeding bird surveys or field review conducted in similar habitat areas on the District. Forest Plan-designated interior forest polygons are not found within the project area and this species has not been documented within the project area. Golden-crowned kinglet is the MIS for interior forest habitat for the ARNF (USDA Forest Service 1997).

Hairy woodpecker. The hairy woodpecker is secure in Colorado. The species inhabits mature forests, open woodlands, beaver ponds, urban areas, recently burned forests, and forests infested with bark beetles. Suitable nesting and foraging habitat is present within or adjacent to the proposed project area. Hairy woodpecker is an MIS for young to mature forest structural stage communities for the ARNF (USDA Forest Service 1997).

Mountain bluebird. The mountain bluebird is secure in Colorado (NatureServe Explorer 2012). The species inhabits open areas of the western U.S., from 5,000 to 14,000 feet elevation. The mountain bluebird prefers more open habitats than other bluebirds and can be found in colder habitats in winter. Typically, the species occurs in Colorado from early May through the summer (CPW 2012).Mountain bluebirds typically forage in open areas, but nest in nearby forests. Nests are constructed in cavities in trees, snags, and frequently in nest boxes. Suitable nesting and foraging habitat is limited throughout the proposed project area, primarily due to the limited amount of open foraging habitat along the power distribution line and access road corridor. Mountain bluebird is an MIS for openings within and adjacent to forest habitat for the ARNF (USDA Forest Service 1997).

Pygmy nuthatch. The pygmy nuthatch is apparently secure in Colorado (NatureServe Explorer 2012). The species inhabits forests in western North America; especially mature ponderosa pine forests. They are typically found at lower and middle elevations, but can sometimes occur up to 10,000 feet elevation. Suitable nesting and foraging habitat is present within or adjacent to the proposed project area. Pygmy nuthatch is an MIS for existing and potential old growth forest habitat for the ARNF (USDA Forest Service 1997).

Warbling vireo. The warbling vireo is secure in Colorado (NatureServe Explorer 2012). The species inhabits mixed-deciduous woodlands, especially along streams, ponds, marshes, and lakes (Cornell Lab of Ornithology 2014d). They are less often found in upland areas away from water (Cornell Lab of Ornithology 2014d). Warbling vireo is the MIS for aspen habitat for the ARNF (USDA Forest Service 1997), a habitat type that is largely limited to the eastern portion of the project area.

Wilson's warbler. The Wilson's warbler is apparently secure in Colorado (NatureServe Explorer 2012). The species breeds in shrub thickets of riparian habitats, the edges of beaver ponds, lakes, bogs, and overgrown clear-cuts in the montane and boreal zones. Suitable summer and breeding habitat is thought to be present within or adjacent to the proposed project area along perennial and intermittent streams and wetlands along portions of the distribution line. This species winters in tropical forests (Cornell Lab of Ornithology 2014e). Wilson's warbler is an MIS for montane riparian areas and wetlands for the ARNF (USDA Forest Service 1997).

3.7.3 Environmental Consequences

3.7.3.1 Methodology

The acres of disturbance associated with each alternative are identified in Chapter 2.0. Impacts from the project to wildlife resources, including special status and management indicator species, were identified based on the locations of the resources in relation to the proposed surface disturbance areas. To determine acres of habitat disturbed by the project for each species, the known locations of proposed surface disturbances were determined for each species. The power distribution line ROW would parallel County Road 162 and NFSRs on either side of the road with the exact locations for wood poles to be determined based on topography and engineering considerations. The exact centerline for the power line and access roads, and associated temporary work areas, would be determined during the design phase for of the proposed project. Design criteria were taken into account in determining acres of potential impact.

3.7.3.2 Measurement Indicators

Measurement indicators identified for wildlife resources include:

- Acres of suitable habitat for each species potentially impacted by each alternative, based on the project footprint;
- Instances of substantially increased risk to avian species protected by the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) from collisions with and/or electrocution by the proposed overhead power distribution line and/or the proposed tower.

3.7.3.3 Significance Criteria

A significant impact on wildlife resources would result if any of the following were to occur from constructing and operating the proposed project:

- Appreciable impacts to avian species protected by the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) from collisions with and/or electrocution by the proposed overhead power distribution line and/or the proposed tower;
- An adverse effect to Federal Threatened or Endangered species (TES);

- Appreciable impacts to populations of Forest Service sensitive species (FSS) and management indicator species (MIS) from construction, operations, and maintenance of the proposed communication site and power distribution line.

3.7.3.4 Comparison of Alternatives

For more information on the analysis for each species listed in **Table 3-14**, refer to the Biological Evaluation Report in the Project Record.

Table 3-14 Summary of Determinations by Alternative for Species Analyzed for the Middle Bald Mountain Area Project

Species	Status	No Action	Proposed Action Middle Bald Mountain	Environmentally Preferred Killpecker
Threatened, Endangered and Proposed Species				
Canada Lynx	Threatened	No Effect	[1]NLAA	NLAA
North American Wolverine	Proposed Threatened	No Effect	No Effect	No Effect
Forest Sensitive Species				
Gray Wolf	FS Sensitive	No Impact	No Impact	No Impact
American marten	FS Sensitive	No Impact	[2]May Impact Individuals…	May Impact Individuals…
Pygmy shrew	FS Sensitive	No Impact	May Impact Individuals…	May Impact Individuals…
Fringed myotis	FS Sensitive	No Impact	May Impact Individuals…	May Impact Individuals…
Townsend's big-eared bat	FS Sensitive	No Impact	No Impact	No Impact
Hoary bat	FS Sensitive	No Impact	May Impact Individuals…	May Impact Individuals…
Northern goshawk	FS Sensitive	No Impact	May Impact Individuals…	May Impact Individuals…
Flammulated owl	FS Sensitive	No Impact	May Impact Individuals…	May Impact Individuals…
Lewis' woodpecker	FS Sensitive	No Impact	No Impact	No Impact
Olive-sided flycatcher	FS Sensitive	No Impact	May Impact Individuals…	May Impact Individuals…
Boreal toad	FS Sensitive	No Impact	No impact	No impact
Northern leopard frog	FS Sensitive	No Impact	No impact	No impact
Management Indicator Species				
Elk	MIS Young to Mature Forest & Openings	No change to populations	No change to populations	No change to populations
Mule deer	MIS Young to	No change to	No change to	No change to

Species	Status	No Action	Proposed Action Middle Bald Mountain	Environmentally Preferred Killpecker
	Mature Forest & Openings	populations	populations	populations
Golden-crowned kinglet	MIS for Interior Forest	No change to populations	No change to populations	No change to populations
Hairy woodpecker	MIS for Young to Mature Forest	No change to populations	No change to populations	No change to populations
Mountain bluebird	MIS for Openings	No change to populations	No change to populations	No change to populations
Pygmy nuthatch	MIS for Old Growth	No change to populations	No change to populations	No change to populations
Warbling vireo	MIS for Aspen	No change to populations	No change to populations	No change to populations
Wilson's Warbler	MIS for Montane Riparian Areas and Wetlands	No change to populations	No change to populations	No change to populations

[1]NLAA – May Affect, but Not Likely to Adversely Affect.

[2]May adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing.

3.7.3.5 No Action Alternative

Under the No Action Alternative, the proposed communication site would not be constructed, operated, or maintained. While current and future uses and activities associated with recreation and forest management would continue in the area, no impacts from implementation of the proposed project would occur to wildlife resources in the project area.

3.7.3.6 Proposed Action – Middle Bald Mountain Site

Threatened, Endangered and Proposed Species

Canada lynx. Suitable lynx habitat is present within the proposed project area, as described above. Under this alternative, there would be temporary impacts to approximately 35 acres of suitable habitat and permanent impacts to approximately 32 of those acres. If any lynx are present during construction and operation of the Proposed Action, direct effects would include possible collisions with vehicles, as well as the loss and fragmentation of suitable habitat, and an increased noise and human presence. Indirect effects could result from increased recreational use of the area and subsequent lynx avoidance of the project area. Under this alternative, the Project "may affect but is not likely to adversely affect" the Canada lynx.

Wolverine. Suitable wolverine habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under this alternative there would be temporary impacts to approximately 35 acres of suitable habitat and permanent impacts to 32 of those acres. If present during construction and operation of the Proposed Action, direct effects would include possible collisions with vehicles, as well as the loss and fragmentation of suitable habitat, and an increased noise and human presence. Indirect effects could result from increased recreational use of the area and subsequent wolverine avoidance of the project area. Under this alternative, the Project would have no effect on the wolverine.

Forest Sensitive Species

Gray wolf. Suitable wolf habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under this alternative there would be temporary impacts to approximately 35 acres of suitable habitat and permanent impacts to 32 or those acres. However, wolves are presumed extirpated from the project area, and occurrence of gray wolves within the project area would be limited to transient individuals at this time. If present during construction and operation of the Proposed Action, direct impacts would include possible collisions with vehicles, as well as the loss and fragmentation of suitable habitat, and an increased noise and human presence. Indirect impacts could result from increased recreational use of the area and subsequent avoidance by wolves of the project area. Overall, no impact to the Gray wolf would result from the project.

American marten. Suitable habitat is present within and adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 28 acres of suitable habitat and permanent impacts to 26 of those acres. If present during construction and operation of the Proposed Action, impacts to martens would include possible collisions with vehicles, as well as loss of den sites due to tree and other ground disturbing and clearing activities, the loss and fragmentation of suitable habitat, and increased noise and human presence. Indirect impacts could result from increased recreational use of the area and subsequent marten avoidance of the project area. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested habitat within the project area.

Pygmy shrew. Suitable habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 28 acres of suitable habitat and permanent impacts to 26 of those acres. Impacts to shrews from the Proposed Action could include the loss and fragmentation of suitable habitat, and increase in noise and human presence. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the presence and disturbance of potentially suitable habitat within the project area.

Fringed myotis. Suitable habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be impacts to approximately 3.6 acres of suitable habitat along the power distribution line corridor along the lower Deadman road. However, due to the narrow footprint of the power line corridor, these impacts would be negligible. If present during construction and operation of the Proposed Action, direct impacts to fringed myotis would include direct disturbance of roosting individuals during the removal of vegetation within the right-of-way (ROW) and removal of hazard trees outside the ROW. Other direct impacts would include the loss of suitable roosting habitat. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested roosting habitat within the project area.

Townsends' big-eared bat. Suitable habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action, there would be impacts to approximately 26 acres of suitable habitat along the power distribution line corridor. However, due to the narrow footprint of the power line corridor, these impacts would be negligible. There are no known roosts, hibernacula, or maternity sites, or structures (e.g., caves or abandoned mines) that could provide such roosting habitat, within the project area, so there would be little chance for direct effects to these habitat features from project activities. Additionally, based on the design criteria for the Project (Section V), there would be no disturbance to surface waters as a result of distribution line construction. Less than 0.1 acre of riparian willow habitat would be impacted by distribution line

construction. Based on the impact analysis, the Project would have "No Impact" on the Townsend's big-eared bat.

Hoary bat. Suitable habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be impacts to approximately 26 acres of suitable habitat along the power line corridor. However, due to the narrow footprint of the power line corridor, these impacts would be negligible. If present during construction and operation of the Proposed Action, direct impacts to the hoary bat would include direct loss of roosting individuals during the removal of forested areas, and removal of forest habitat for potential roosting habitat. However, because this species roosts in the foliage at the ends of branches, it is likely that bats roosting on a tree would be able to fly away before potential injury from tree felling occurred. Unlikely and/or minor impacts of tree removal for the power line and access road clearing may include removal of potential roosting trees. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested roosting habitat within the project area.

Northern goshawk. Suitable habitat is present within and adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 28 acres of suitable habitat and permanent impacts to 26 of those acres . If present during construction and operation of the Proposed Action, direct impacts to the goshawk could include direct loss of nest sites, as well as collision and electrocution as a result of the operation of the distribution line. Collision and electrocution potential would be reduced by implementing environmental protection measures from the Suggested Practices for Protection of Raptors on Power Lines (APLIC 2006). If goshawk nest sites are found within or adjacent to the distribution line corridor prior to construction, the nest would be buffered by 0.5 mile until the chicks have fledged as directed by CDOW guidelines (CDOW 2008). Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long-term removal of potentially suitable forested nesting and foraging habitat within the project area and the potential for collision and electrocution impacts from the distribution line.

Flammulated owl. Suitable habitat is present within or adjacent to the proposed project area along the Deadman Road area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be impacts to approximately 3 acres of suitable habitat. If present during construction and operation of the Proposed Action, direct impacts to the flammulated owl could include direct loss of nest sites, forest habitat removal, and collision as a result of the operation of the distribution line. Collision potential would be reduced by implementing environmental protection measures from the Suggested Practices for Protection of Raptors on Power Lines (APLIC 2006). If nest sites are found within the distribution line corridor prior to construction, the nest would be buffered by 0.25 mile until the chicks have fledged. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested nesting habitat within the project area and the potential for collision impacts from the distribution line.

Boreal owl. Suitable habitat is present within or adjacent to the proposed project area. If present during construction and operation of the Proposed Action, direct impacts to the boreal owl would include direct loss of nest sites; removal of approximately 29 acres of nesting and foraging habitat; and collision as a result of the operation of the distribution lines. Collision potential would be reduced by implementing environmental protection measures from the Suggested Practices for Protection of Raptors on Power Lines (APLIC 2006). If boreal owl nest sites are found within the distribution line corridor prior to construction, the nest would be buffered until the chicks have fledged as directed by Forest Plan Standard 101 for Raptor Nest Protection. Under this alternative, the Project "may impact individuals or

habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested nesting and foraging habitat within the project area and the potential for collision impacts from the distribution line.

Lewis' woodpecker. Less than one acre of suitable nesting and foraging habitat is present within or adjacent to the proposed project area along the lower Deadman road. If present during construction and operation of the Proposed Action, potential direct and indirect impacts to the Lewis' woodpecker could occur from loss of nests during tree removal. Based on the limited amount of habitat in the project area, the Project would have "No Impact" on the Lewis' woodpecker.

Olive-sided flycatcher. Suitable nesting and foraging habitat is present within or adjacent to the proposed project area. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 29 acres of suitable habitat and permanent impacts to 27 of those acres. If the olive-sided flycatcher is present during construction and operation of the Proposed Action, potential direct and indirect impacts on this species would include loss of nests during tree removal and habitat loss, alteration, and fragmentation. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of 27 acres of potentially suitable forested nesting and foraging habitat within the project area.

Boreal toad and Northern leopard frog. Less than 0.1 acre of shrub-willow habitat may be impacted by distribution line construction. Although suitable habitat may occur in the project area, the avoidance of disturbance to any wetlands, surface waters, or other suitable habitats for this species will avoid any impacts to the boreal toad and Northern leopard frog.

Management Indicator Species

Elk. Under the Proposed Action, there would be approximately 18 acres of temporary and less than 1 acre of permanent impacts to elk production areas. These areas are the most significantly impacted by human-caused disturbances and may cause cows to move, resulting in calves being more susceptible to mortality.

Under the Proposed Action, there would be approximately 22.5 acres of temporary and less than 1 acre of permanent impacts to elk summer concentration areas. Impacts include the short-term loss of potential foraging habitat and an increase in habitat fragmentation within the project surface disturbance area. However, this loss of vegetation would represent less than 1 percent of the overall available habitat within the region. The loss of available woody/shrubby vegetation would be long-term (greater than 20 years). However, herbaceous species may become established within 3 to 5 years, depending on reclamation success. Suitable habitat adjacent to disturbed areas would be available for elk until grasses and woody vegetation were re-established within the disturbance areas. Changes to elk populations or trends within the ARNF are not expected from the proposed Project.

Mule deer. Under the Proposed Action, impacts include the short-term loss of potential foraging habitat and an increase in habitat fragmentation within the project surface disturbance area. However, this loss of vegetation would represent a small percentage (less than 1 percent) of the overall available habitat within the region. The loss of available woody/shrubby vegetation would be long-term (greater than 20 years). However, herbaceous species may become established within 3 to 5 years, depending on reclamation success. In most instances, suitable habitat adjacent to disturbed areas would be available for mule deer until grasses and woody vegetation were re-established within the disturbance areas.

Additional impacts to mule deer would result from increases in noise levels and human presence during construction and operation activities. Studies have shown that big game species tend to move away from areas of human activity and roads, thereby reducing habitat utilization near disturbance areas (Cole

et al. 1997; Sawyer et al. 2006; Ward 1976). Disturbance associated with construction activities would be short-term, and it is assumed that animals would return to the area following the completion of the Proposed Action construction. Changes to mule deer populations or trends within the ARNF are not expected from the proposed Project.

Golden-crowned kinglet. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 24 acres of, and permanent impacts to 23 acres of, suitable habitat. If present during construction and operation of the Proposed Action, potential direct and indirect impacts to this species could include mortalities to individuals by loss of nests during tree removal and habitat loss, alteration, and fragmentation from tree removal for the power distribution line and access road. Changes to Golden-crowned kinglet populations or trends within the ARNF are not expected from the proposed Project.

Hairy woodpecker. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 29 acres of, and permanent impacts to 27 acres of, suitable habitat. If present during construction and operation of the Proposed Action, potential direct and indirect impacts to this species could include loss of nests during tree removal and habitat loss, alteration, and fragmentation. Changes to Hairy woodpecker populations or trends within the ARNF are not expected from the proposed Project.

Mountain bluebird. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 35 acres and permanent impacts to 32 acres of forest that could provide suitable nesting habitat. However, due to the limited open foraging habitat, actual suitable bluebird habitat is likely much less. If present during construction and operation of the Proposed Action, potential direct and indirect impacts to the mountain bluebird could include loss of nests during tree removal and habitat loss, alteration, and fragmentation. Changes to Mountain bluebird populations or trends within the ARNF are not expected from the proposed Project.

Pygmy nuthatch. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Proposed Action there would be temporary impacts to approximately 29 acres and permanent impacts to 27 acres of suitable habitat. If present during construction and operation of the Proposed Action, potential direct and indirect impacts to this species could include loss of nests during tree removal and habitat loss, alteration, and fragmentation. Changes to Pygmy nuthatch populations or trends within the ARNF are not expected from the proposed Project.

Warbling vireo. Less than one acre of suitable nesting and foraging habitat would be impacted by the Proposed Action. If present during construction and operation of the Proposed Action, potential direct and indirect impacts to the warbling vireo would include loss of nests during tree removal and habitat loss, alteration, and fragmentation. Changes to Warbling vireo populations or trends within the ARNF are not expected from the proposed Project.

Wilson's warbler. Less than 0.1 acre of riparian shrub-willow habitat would be impacted by distribution line construction, making impacts from the removal of suitable foraging habitat minimal. Potential direct and indirect impacts to this species would include habitat loss, alteration and fragmentation. Changes to Wilson's warbler populations or trends within the ARNF are not expected from the proposed Project.

3.7.3.7 Preferred Alternative – Killpecker Site

Threatened, Endangered and Proposed Species

Canada lynx. Impacts would be the same as those listed for Proposed Action with the exception of amount of acres of suitable habitat disturbed. Based on the impacts discussed for vegetation (Section 3.5.2.1), under the Preferred Alternative there would be temporary impacts to approximately 32 acres of, and permanent impacts to about 30 acres of, suitable habitat; a difference of approximately 3 and 2

acres less impact, respectively. Under this alternative, the Project "may affect but is not likely to adversely affect" the Canada lynx.

Wolverine. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 32 acres of, and permanent impacts to about 30 acres of, suitable habitat; a difference of approximately 3 and 2 acres less impact, respectively. Under this alternative, the Project would have no effect on the wolverine.

Forest Sensitive Species

Gray wolf. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 32 acres of, and permanent impacts to about 30 acres of, suitable habitat; a difference of approximately 3 and 2 acres less impact, respectively. Overall, no impact to the Gray wolf would result from the project.

American marten. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative, there would be temporary impacts to approximately 26 acres of, and permanent impacts to about 24 acres of, suitable habitat; a difference of approximately 2 acres less impact, respectively. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested habitat within the project area.

Pygmy shrew. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 26 acres of, and permanent impacts to 24 acres of, suitable habitat; a difference of approximately of 2 acres less impact. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the presence and disturbance of potentially suitable habitat within the project area.

Fringed myotis. Impacts would be the same as those listed for the Proposed Action. Under the Preferred Alternative, as under the Proposed Action, there would be impacts to approximately 3.6 acres of fringed myotis habitat. The overall determination is that the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested roosting habitat within the project area.

Townsends' big-eared bat. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be impacts to approximately 23 acres, a difference of approximately 3 acres less impact. However, based on the design criteria for the Project (Section 2.4), there would be no disturbance to surface waters as a result of distribution line construction. Less than 0.1 acre of riparian willow habitat would be impacted by distribution line construction. Based on the impact analysis, the Project would have "No Impact" on the Townsend's big-eared bat.

Hoary bat. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be impacts to approximately 23 acres, a difference of approximately of 3 acres less impact. The Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested roosting habitat within the project area.

Northern goshawk: Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 26 acres of, and permanent impacts to 24 acres of, suitable habitat; a difference of approximately 2 acres less impact, respectively. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long-term removal of potentially suitable forested nesting and foraging habitat within the project area and the potential for collision and electrocution impacts from the distribution line.

Flammulated owl. Impacts would be the same as those listed for the Proposed Action. Under the Preferred Alternative, as under the Proposed Action, there would be impacts to approximately 3 acres of flammulated owl habitat. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested nesting habitat within the project area and the potential for collision impacts from the distribution line.

Boreal owl: Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be impacts to approximately 26 acres of suitable nesting and foraging habitat, a difference of approximately 3 acres less impacts. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of potentially suitable forested nesting and foraging habitat within the project area and the potential for collision impacts from the distribution line.

Lewis' woodpecker. Impacts would be the same as those listed for the Proposed Action. Under the Preferred Alternative, as under the Proposed Action, there would be impacts to less than 1 acre of suitable Lewis' woodpecker habitat. Based on the limited amount of habitat in the project area, the Project would have "No Impact" on the Lewis' woodpecker.

Olive-sided flycatcher. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 27 acres of, and permanent impacts to 24 acres of, suitable habitat; a difference of approximately of 2 and 3 acres less impact, respectively. Under this alternative, the Project "may impact individuals or habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species." This determination is based on the long term removal of 27 acres of potentially suitable forested nesting and foraging habitat within the project area.

Boreal toad and Northern leopard frog. Although suitable habitat may occur in the project area, the avoidance of disturbance to any wetlands or other suitable habitats for this species will avoid any impacts to the boreal toad. The impacts of the Preferred Alternative would be the same as those listed for the Proposed Action; less than 0.1 acre of shrub-willow habitat may be impacted by distribution line construction and no impact to these species would result.

Management Indicator Species

Elk. Under the Preferred Action there would be approximately 13 acres of temporary and less than 1 acre of permanent impacts to elk production areas, 5 acres less temporary impact than the Proposed Action, but the same number of permanent impact acres. Additionally, under the Preferred Action there would be approximately 17 acres of temporary and less than 1 acre of permanent impacts to elk summer concentration areas. These are about 5 acres less of temporary impact than the Proposed Action. The acres of permanent impact and the direct and indirect impacts would be the same as those listed for the Proposed Action. Changes to elk populations or trends within the ARNF are not expected from the project.

Mule deer. Under the Preferred Action, the acres of short- and long-term impacts would be the same as those listed for the Proposed Action. Changes to mule deer populations or trends within the ARNF are not expected from the project.

Golden-crowned kinglet. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 23 acres and permanent impacts to about 21 acres of suitable habitat, a difference of approximately of 1 and 2 acres less impact, respectively. Changes to Golden-crowned kinglet populations or trends within the ARNF are not expected from the project.

Hairy woodpecker. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under The Preferred Alternative, there would be temporary impacts to approximately 27 acres and permanent impacts to 24 acres of suitable habitat, a difference of approximately of 2 and 3 acres less impact, respectively. Changes to Hairy woodpecker populations or trends within the ARNF are not expected from the project.

Mountain bluebird. Impacts would be the same as those listed for the Proposed Action with the exception of amount of acres of suitable habitat disturbed. Under the Preferred Alternative there would be temporary impacts to approximately 32 acres and permanent impacts to about 30 acres of suitable habitat; a difference of approximately 3 and 2 acres less impact, respectively. Changes to Mountain bluebird populations or trends within the ARNF are not expected from the project.

Pygmy nuthatch. Impacts of the Preferred Alternative would be the same as those listed for the Proposed Action; there would be temporary impacts to approximately 29 acres and permanent impacts to 27 acres of suitable habitat. Changes to Pygmy nuthatch populations or trends within the ARNF are not expected from the project.

Warbling vireo. The direct and indirect impacts of the Preferred Alternative would be the same as those listed for the Proposed Action. There would be less than one acre of impact to suitable nesting and foraging habitat, as with the Proposed Action. Changes to Warbling vireo populations or trends within the ARNF are not expected from the project.

Wilson's warbler. Impacts of the Preferred Alternative would be the same as those listed for the Proposed Action. Less than 0.1 acre of riparian shrub-willow habitat would be impacted by distribution line construction. Changes to Wilson's warbler populations or trends within the ARNF are not expected from the project.

3.7.3.8 Cumulative Effects

Cumulative effects to federally listed threatened or endangered species or Forest Service sensitive species (TES) may occur from a proposed action when effects from the proposed action are combined with impacts from past, present, and reasonably foreseeable future actions, whether those actions are federal or non-federal. The cumulative effects study area for this cumulative effect assessment is based on the location of past and future timber and fuel projects in the project vicinity, an area of approximately 24,450 acres. Approximately 5,000 acres of past timber and fuels projects have occurred within the analysis area. Additionally, within the Elkhorn Planning area, an additional 2,200 acres are planned for vegetation treatments. Other past, present, and reasonably foreseeable future actions that can contribute to cumulative impacts on sensitive species and their habitats include road construction and maintenance, residential/commercial development on adjacent private lands, and recreational activities on both public and private lands.

The analysis assumes that: 1) human use of the study area may increase slightly with the implementation of the Project; and 2) the action alternatives would only impact a small amount (typically 30 acres or less) of suitable habitat for the species analyzed. This is a very small portion of the available

habitat in the analysis area, which for most species analyzed is nearly 24,500 acres. Consequently, the action alternatives would not contribute to appreciable cumulative impacts for any of the species analyzed.

3.8 Unavoidable Adverse Effects

The following is a description of adverse effects that are unavoidable with implementation of action alternatives. For further discussion of the effects on the resources listed below, see Chapter 3 under the respective resource topics.

- Scenic quality would be affected adversely by both the proposed action , which would also adversely affect the recreational setting.
- Soils can be eroded wherever vegetation and soils are disturbed. Compaction can occur where vehicles and equipment are used.
- Cultural resources can be disturbed or destroyed where human or natural activities take place on the Middle Bald Communication Site.

3.9 Relationship between Short-Term Uses and Long-Term Productivity

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16). For further discussion of the effects on the resources listed below, see Chapter 3 under the respective resource topics.

Actions under the Proposed and Preferred Alternatives would implement design measures that protect soil productivity. Any decrease in long-term soil productivity resulting from actions will be negligible.

As provided for by the Forest Plan, management requirements guide implementation of the action alternatives. Adherence to these requirements ensures that long-term productivity of the land is not impaired by short-term uses.

3.10 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power distribution line right-of-way or road. For further discussion of the effects on each resources, see the preceding sections of this chapter under the respective resource topics.

There are no irreversible commitments of resources with any of the alternatives analyzed.

Irretrievable commitments of resources include the following:

- Soil, plant, and timber productivity is lost where road construction is planned and under facilities
- Wildlife habitat loss or modification for certain wildlife species is likely under the action alternatives. As vegetation recovers, habitat would eventually return over various periods of time depending on the amount of vegetation treatment and/or disturbance.
- Noxious and invasive weeds resulting from alternative implementation could potentially have an irretrievable commitment of resources if allowed to persist. Infestation can impact native plant communities that lead to losses in wildlife habitat, soil productivity, soil erosion, forage for grazing, and vegetative diversity.

Scenic conditions would be modified at the Middle Bald site; changing the sense of place.

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Middle Bald Mountain Area Communication Site
Draft Environmental Impact Statement
Larimer County, CO

Chapter 4.0 Preparers, Agencies and Persons Consulted, and Distribution List

4.0 Preparers, Agencies and Persons Consulted, and Distribution List

4.1 List of Preparers

The individuals listed in Tables 4-1 and 4-2 were actively involved with the preparation of this EIS.

Table 4-1 Federal Agency Staff

Name	Agency	Project Role
Kevin Atchley	U.S. Forest Service	District Ranger
Carol Kruse	U.S. Forest Service	Special Projects Coordinator
Sue Greenley	U.S. Forest Service	Lands Special Uses
Karen Roth	U.S. Forest Service	Forest Environmental Coordinator
Reghan Cloudman	U.S. Forest Service	Public Affairs
Kevin Colby	U.S. Forest Service	Landscape Architect
Kevin Cannon	U.S. Forest Service	Recreation
Dick Edwards	U.S. Forest Service	Fire, Fuels, & Timber Management
Dale Oberlag	U.S. Forest Service	District Wildlife Biologist
Steve Popovich	U.S. Forest Service	Forest Botanist
Kim Obele	U.S. Forest Service	Range/Weeds
Deb Entwistle	U.S. Forest Service	North Zone Hydrologist
Lizandra Nieves-Rivera	U.S. Forest Service	Soils
Abraham Thompson	U.S. Forest Service	Archeologist
Jonathan McIntosh	U.S. Forest Service	Engineer
Clayton Terrell	U.S. Forest Service	Radio Technician
Janice Naylor	U.S. Forest Service	GIS

Table 4-2 EIS Contractors

Name	Firm	Project Role	Academic Credentials
Tom Keith	Logan Simpson Design	Principal, Senior Reviewer	MS, Regional Resource Planning
Tanya Copeland	Logan Simpson Design	Project Manager/NEPA	MS, Ecology and Evolution
Bruce Meighen	Logan Simpson Design	Public Involvement	Master of City Planning
Jeremy Call	Logan Simpson Design	Visual Resources	Master of Landscape Architecture
Jeremy Palmer	Logan Simpson Design	Visual Simulation	AAS, Computer Animation
Ryan McClain	Logan Simpson Design	Visual Simulation	BS, Landscape Architecture
Kristy Bruce	Logan Simpson Design	GIS Analyst	Master of Landscape Architecture
Erin Bergquist	AECOM	Vegetation & Wetlands	MS, Ecology
Andrew Newman	AECOM	Wildlife Biology	BS, Conservation Biology/Wildlife Management
Patricia Lorenz	AECOM	Wildlife Biology	BS Wildlife Biology
Terra Mascareñas	AECOM	Soils	BS, Soil and Crop Science
David Fetter	AECOM	Hydrology	BS, Watershed Science
Jack Pfertsh	Alpine Archaeological Consultants	Principal Investigator, Cultural Resources	MA, Archaeology and Heritage

4.2 List of Agencies and Persons Consulted

Individuals consulted during preparation of the EIS are listed in Table 4-3 below.

Table 4-3 List of Agencies and Persons Consulted

Name	Agency or Organization	Role or Title
Edward Nichols	Office of Archaeology and Historic Preservation	State Historic Preservation Officer
Susan Linner	U.S. Fish & Wildlife Service	Colorado Field Supervisor

4.3 DEIS Distribution List

4.3.1 Federal, State, and Local Agencies and Officials, and Project Partners

An electronic or printed copy of the Draft EIS was distributed to the elected officials, tribal representatives, agencies, and other organizations identified in Table 4-4 below.

Table 4-4 DEIS Distribution List

Name/Title	Organization
Federal Elected Officials	
Senator Mark Udall	U.S. Senate
Senator Michael Bennet	U.S. Senate
Congressman Jared Polis	U.S. House of Representatives
Tribal Representatives	
The Honorable Janice Prairie Chief Boswell, Governor	Cheyenne and Arapaho Tribes of Oklahoma
Ms. Karen Little Coyote, Cheyenne Director, Culture and Heritage	Cheyenne and Arapaho Tribes of Oklahoma
Mr. Dale Hamilton, Arapaho Director, Culture and Heritage	Cheyenne and Arapaho Tribes of Oklahoma
Mr. William C'Hair	Northern Arapaho Culture Commission
Ms. Kim Harjo	Northern Arapaho Business Council
Ms. Darlene Conrad, Tribal Historic Preservation Officer	Northern Arapahoe Tribe of The Wind River
Mr. Leroy Spang, Tribal Council	Northern Cheyenne Tribe
Mr. Linwood Tallbull, Tribal Historic Preservation Officer	Northern Cheyenne Tribe
The Honorable Pearl Casias, Chairman	Southern Ute Indian Tribe
Mr. Neil Cloud, NAGPRA Representative	Southern Ute Indian Tribe
The Honorable Ronald Wopsock, Chairman	Ute Indian Tribe
Ms. Betsy Chapoose, Director of Cultural Rights and Protection	Ute Indian Tribe
State Elected Officials	
Governor John Hickenlooper	Governor of Colorado
Federal Agencies	
Dr. Willie R. Taylor, Director	Office of Environmental Policy and Compliance, Department of the Interior
Ms. Suzanne Bohan, Program Director	NEPA Compliance and Review Program, EPA Region 8
Mr. Tracy Simmons, Branch Chief, Policy Division	Federal Communications Commission, DC office
Mr. Don Johnson, Attorney Advisor	Federal Communications Commission, DC office
Ms. Susan Linner, Field Supervisor	USFWS Ecological Services, Colorado Field Office
Director of Planning and Review	Advisory Council on Historic Preservation

Name/Title	Organization
Deputy Director	USDA Animal and Plant Health Inspection Service - PPD/EAD
National Environmental Coordinator	Natural Resource Conservation Service
Director	US Army Corps of Engineers - Northwestern Division
Director of NEPA Policy and Compliance	Department of Energy
Division Administrator	Federal Highway Administration-Colorado Division
State Agencies	
Mr. James Davis, Executive Director	Colorado Department of Public Safety
Col. Scott Hernandez, Chief	Colorado State Patrol
Captain Bob Parish, Commander	Colorado State Patrol (Fort Collins)
Mr. Mike King, Executive Director	Colorado Department of Natural Resources
Mr. Christopher Urbina, Executive Director	Colorado Department of Public Health and Environment
Local Agencies/Officials	
Mr. Lew Gaiter III (District 1)	Larimer County Board of County Commissioners
Mr. Steve Johnson (District 2)	Larimer County Board of County Commissioners
Mr. Robert Helmick, Senior Planner	Larimer County Planning & Building Services
Mr. Tom DeMint, Chief	Poudre Fire Authority
Ms. Marian Kelly, Fire Chief	Crystal Lakes Volunteer Fire Department
Mr. Cris Meeks, Fire Chief	Red Feather Lakes Volunteer Fire Department
Mr. Greg Niswender, Fire Chief	Glacier View Fire Protection District
Mr. Larry Peterson, Chief	Livermore Fire Protection District
Ms. Bette Blinde, President	Poudre Canyon Fire Protection District
Mr. Don Davis	Larimer County Search and Rescue
Mr. Bob Gann	Rist Canyon Volunteer Fire Department
Other Organizations & Stakeholders	
Ms. Deborah Hochhalter	Northern Colorado Environmental Alliance
Ms. Judy Corwin	Mummy Range Institute
Chairperson	Poudre Wilderness Volunteers

4.3.2 Individuals Receiving Copies of the Draft EIS

A Notice of Availability containing a link to download the Draft EIS was mailed to approximately 200 individuals on the project mailing list. The project mailing list includes individuals on the notification list maintained by the Forest Service, individuals who provided comments during the two public scoping periods, and other stakeholders.

A hard copy of the Draft EIS is available for public review at the Red Feather Lakes Community Library (71 Firehouse Lane, Red Feather Lakes, Colorado) and the Old Town (Main) Library (201 Peterson Street, Fort Collins, Colorado). Hard copies are also available by request.

4.4 Contractor Disclosure Statement

Pursuant to 40 CFR 1506.5(c), we Logan Simpson Design, Inc., headquartered at 51 West Third Street, Suite 450, Tempe, AZ 85281, do hereby certify we have no financial or other interests in the execution or outcome of the proposed Project identified in this EIS, nor any financial or other interests in other developments related to this Project; nor any financial or other interests in any mitigation requirements associated with the proposed action.

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Chapter 5.0 References

5.0 References

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Appendix A: Notice of Intent

Notices

Federal Register
Vol. 77, No. 179
Friday, September 14, 2012

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Forest Service

Arapaho and Roosevelt National Forests and Pawnee National Grassland; Larimer County, CO; Middle Bald Mountain Public Safety Radio Communications Site

AGENCY: Forest Service, USDA.

ACTION: Notice of intent to prepare an environmental impact statement.

SUMMARY: The Arapaho and Roosevelt National Forests and Pawnee National Grassland is preparing an environmental impact statement to consider and disclose the environmental effects of constructing and operating a government-only, public safety radio communications facility near the summit of Middle Bald Mountain, in the Roosevelt National Forest. The Larimer County Sheriff's Office has proposed construction of a site to improve public safety radio communications among government agencies, such as County and State law enforcement, local fire departments, Larimer County Search and Rescue, U.S. Forest Service, FBI, and other emergency responders and public service providers operating in the north central portions of the County. The proposed communication facility would also improve radio communication in areas of the Cache la Poudre Canyon (the Canyon) and State Highway 14 which currently have poor or no radio communication.

DATES: Comments concerning the scope of the analysis must be received by October 29, 2012. The draft environmental impact statement is expected to be issued for public review in February, 2013, and the final environmental impact statement is expected to be issued in April, 2013.

ADDRESSES: Send written comments to Middle Bald Communication Site Comments, c/o Logan Simpson Design, 123 N. College Ave., Ste. 206, Fort Collins, CO 80524. Comments may also be sent via email to *MiddleBald@logansimpson.com*. Include "Middle Bald Comment" in the subject line.

FOR FURTHER INFORMATION CONTACT: Visit the Forest Service and County project Web sites, *http://www.fs.usda.gov/goto/arp/middlebald* and *http://larimer.org/baldmountain/*, or contact Carol Kruse, Special Projects Coordinator, at (970) 295–6663. Further information will also be available at two public open houses to be scheduled in early October; the exact dates, times, and locations will be announced locally.

Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday.

SUPPLEMENTARY INFORMATION:

Purpose and Need for Action

The purpose of and need for this action are to improve poor or non-existent VHF and 800 MHz radio coverage in the north central part of Larimer County, including Red Feather Lakes, Crystal Lakes, Glacier Meadows, the Canyon, State Highway 14, and in recreational areas in the Roosevelt National Forest. This lack of radio coverage also affects other public safety users, including local fire departments, FBI, Larimer County Search and Rescue, County Road and Bridge Department, the U.S. Forest Service, Colorado Department of Transportation, and the Colorado State Patrol. The principal land mobile radio system for Larimer County first responders is the 800 MHz State of Colorado Digital Trunked Radio System (DTRS); the County also operates a legacy VHF radio system.

The Forest Service has identified a need to provide reliable, all-weather, VHF and 800 MHz communications capabilities in north central Larimer County and in additional reaches of the Canyon that would allow fire and medical first-responders, law enforcement, and other government public safety and public service agencies to more-quickly and better assist the residents and recreational visitors during both emergency and routine incidents in those areas. The need was reinforced this summer during the Hewlett Gulch and High Park wildfires.

Installation of the proposed radio communications facility under the proposed action would meet the purpose and need by improving VHF and 800 MHz coverage and reliability in north central Larimer County and the Canyon for existing fire and medical first-responders, law enforcement, and other local, State, and Federal emergency and public services users of the VHF and 800 MHz radio systems.

Proposed Action

The proposed action is to construct a government-only public safety radio communications facility on Middle Bald Mountain for both VHF and 800 MHz communications equipment. On-the-ground testing of both VHF and 800 MHz radio signal coverage and signal strength indicates that a tower at that location would provide substantially improved VHF and 800 MHz coverage in northwestern Larimer County and in the Canyon. An approximately 70-foot high, 3-legged steel lattice tower and 200 square-foot building would hold equipment for use by Larimer County, local fire departments, the State of Colorado, the Forest Service, and search and rescue organizations.

During construction a 2,900-foot long and 10-foot wide access road passable by heavy construction vehicles would need to be built from National Forest Service Road (NFSR) 517 to the proposed site facilities near the summit. Post-construction, the access road could be rehabilitated to a level required by the Forest Service. Gates could be installed at the junction with NFSR 517 and where the access road exits treeline onto the open meadow of the Middle Bald Mountain summit, if required by the Forest Service.

Power for the communication facility would be provided by extension of the commercial electrical power grid from a location in Section 32, Township 10 North and Range 73 West. The approximately 12-mile long powerline would be installed overhead beginning in the Redfeather Lakes area, alongside County Road 162 (Deadman Road) to NFSR 300, alongside NFSR 300 to NFSR 517, alongside NFSR 517 to the point at which the proposed access road would leave NFSR 517, and alongside the access road to the point at which the access road exits the trees into the open meadow of the summit. From that point the powerline would be buried under

the access road to the communication facilities. The proposed facility would include a backup 20 kilowatt diesel generator for use in the event of interruption of commercial power.

It is anticipated that facility construction would take three to four months and would occur in a single summer season.

Possible Alternatives

The Environmental Impact Statement will analyze the proposed action, No Action (no communication site on Middle Bald Mountain), and other action alternatives that may be developed after scoping. Other action alternatives could consider alternative power sources, powerline alignments, and installation methods; alternative access road alignments and designs; alternative building designs; and alternative site locations for the tower and building near the summit of Middle Bald Mountain.

Responsible Official

The responsible official is the Forest Supervisor for the Arapaho and Roosevelt National Forests and Pawnee National Grassland.

Nature of Decision To Be Made

The responsible official will decide whether or not to permit the proposed action or other action alternative that may be developed by the Forest Service as a result of scoping.

Permits or Licenses Required

A Special Use permit from the Forest Service would be required to implement the proposal or other action alternative that may be developed by the Forest Service after scoping. A non-significant Forest Plan amendment would also be necessary if the decision is to permit a communication site on Middle Bald Mountain.

Scoping Process

This notice of intent initiates the scoping process, which guides the development of the environmental impact statement. The Forest Service is soliciting comments from Federal, State, and local agencies, and other individuals or organizations who may be interested in or affected by implementation of the proposed project. Input provided by interested and/or affected individuals, organizations, and governmental agencies will be used to identify resource issues that will be analyzed in the Draft EIS. The Forest Service will identify key issues raised during the scoping process and use them to formulate alternatives, prescribe mitigation measures and project design features, and analyze environmental effects.

It is important that reviewers provide their comments at such times and in such a manner that they are useful to the agency's preparation of the environmental impact statement. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions. There will be two public open houses approximately three weeks into the scoping period, at which written public comments will be accepted. Those meeting dates, times, and locations will be announced locally.

Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered.

Dated: September 5, 2012.

Glenn P. Casamassa,

Forest Supervisor.

[FR Doc. 2012–22366 Filed 9–13–12; 8:45 am]

BILLING CODE 3410–11–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–69–2012]

Foreign-Trade Zone 230—Piedmont Triad Area, North Carolina; Notification of Proposed Production Activity, Sonoco Corrflex (Kitting—Gift Sets), Rural Hall and Winston-Salem, NC

The Piedmont Triad Partnership, grantee of FTZ 230, submitted a notification of proposed production activity on behalf of Sonoco Corrflex, located in Rural Hall and Winston-Salem, North Carolina. The notification conforming to the requirements of the regulations of the Foreign-Trade Zones Board (15 CFR 400.22) was received on August 20, 2012.

The Sonoco Corrflex facilities are located within Sites 24–27 of FTZ 230. The facilities are used for the kitting of cosmetic and personal hygiene gift sets. Production under FTZ procedures could exempt Sonoco Corrflex from customs duty payments on the foreign status components used in export production. On its domestic sales, Sonoco Corrflex would be able to choose the duty rates during customs entry procedures that apply to cosmetic and personal hygiene gift sets (duty rate range: free–6.5%) for the foreign status inputs noted below. Customs duties also could possibly be deferred or reduced on foreign status production equipment.

Components and materials sourced from abroad include: Perfumes/toilet waters, makeup preparations (lip, eye, rouge and powder), manicure/pedicure preparations, body lotion and moisturizers, skin toners and astringents, shampoos and conditioners, shaving/after-shave preparations, deodorants/anti-perspirants, bath salts, body wash/soaps, toners, cleaners, plastic travel containers, polymer bags, plastic packing, security tags, plastic lids/caps, bags and cases of textile materials (HTSUS 4202.22, 4202.32, 4202.92—such items included within certain categories will be admitted to FTZ 230 under domestic (duty-paid) status (19 CFR 146.43), as described in the notification document), other bags/sacks, loofahs, tissue paper, paperboard/corrugated wrappers and pads, pocket mirrors, glass bottles, imitation jewelry, sunglasses, stuffed toys, brushes, travel sets, combs, and makeup application pads (duty rate ranges from free to 8.1%; 2¢ each + 7.0%).

Public comment is invited from interested parties. Submissions shall be addressed to the Board's Executive Secretary at the address below. The closing period for their receipt is October 24, 2012.

A copy of the notification will be available for public inspection at the Office of the Executive Secretary, Foreign-Trade Zones Board, Room 21013, U.S. Department of Commerce, 1401 Constitution Avenue NW., Washington, DC 20230–0002, and in the "Reading Room" section of the Board's Web site, which is accessible via *www.trade.gov/ftz.*

For further information, contact Pierre Duy at *Pierre.Duy@trade.gov,* or (202) 482–1378.

Dated: September 7, 2012.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2012–22735 Filed 9–13–12; 8:45 am]

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DEPARTMENT OF COMMERCE

International Trade Administration

[A–428–820]

Certain Small Diameter Seamless Carbon and Alloy Steel Standard, Line, and Pressure Pipe From Germany: Continuation of Antidumping Duty Order

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

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Appendix B: Sensitive and Rare Plant Species with Potential to Occur within the Project Area

Table B-1. Sensitive and Rare Plant Species with Potential to Occur within the Project Area

Common Name	Scientific Name	Status	Carried Forward for Detailed Analysis
Park milkvetch	*Astragalus leptaleus*	Sensitive	No. Species and habitat were not observed during field surveys.
Narrow-leaved moonwort	*Botrychium lineare*	Sensitive	No. Species and habitat were not observed during field surveys.
Leather leaf moonwort	*Botrychium multifidum*	Sensitive	No. Species and habitat were not observed during field surveys.
Lesser panicled sedge	*Carex diandra*	Sensitive	No. Species and habitat were not observed during field surveys.
Livid sedge	*Carex livida*	Sensitive	No. Species and habitat were not observed during field surveys.
Yellow lady's slipper	*Cypripedium parviflorum*	Sensitive	No. Species and habitat were not observed during field surveys.
Roundleaf sundew	*Drosera rotundifolia*	Sensitive	No. Species and habitat were not observed during field surveys.
Slender cottongrass	*Eriophorum gracile*	Sensitive	No. Species and habitat were not observed during field surveys.
White adder's mouth	*Malaxis brachypoda*	Sensitive	No. Species and habitat were not observed during field surveys.
Weber's monkeyflower	*Mimulus gemmiparus*	Sensitive	No. Species and habitat were not observed during field surveys.
Kotzebue's grass of Parnassus	*Parnassia kotzebuei*	Sensitive	No. Species and habitat were not observed during field surveys.
Rocky Mountain cinquefoil	*Potentilla rupincola*	Sensitive	No. Species and habitat were not observed during field surveys.
Dwarf raspberry	*Rubus arcticus* ssp. *acaulis*	Sensitive	No. Species and habitat were not observed during field surveys.
Silver willow	*Salix candida*	Sensitive	No. Species and habitat were not observed during field surveys.
Autumn willow	*Salix serissima*	Sensitive	No. Species and habitat were not observed during field surveys.
Lesser bladderwort	*Utricularia minor*	Sensitive	No. Species and habitat were not observed during field surveys.
Selkirk’s violet	*Viola selkirkii*	Sensitive	No. Species and habitat were not observed during field surveys.
Larimer aletes	*Aletes humilis*	Rare	No. Species and habitat were not observed during field surveys.
Forked spleenwort	*Asplenium septentrionale*	Rare	No. Species and habitat were not observed during field surveys.
Little moonwort	*Botrychium simplex*	Rare	No. Species and habitat were not observed during field surveys.

Common Name	Scientific Name	Status	Carried Forward for Detailed Analysis
Reflected, western, lance-leaf, common, Mingan, pale, northern moonwort	*Botrychium*: *B. echo, B. hesperium, B. lanceolatum, B. lunaria, B. minganense, B. pallidum, B. pinnatum*	Rare	No. Species and habitat were not observed during field surveys.
Woolyfruit sedge	*Carex lasiocarpa*	Rare	No. Species and habitat were not observed during field surveys.
Bristle-stalk sedge	*Carex leptalea*	Rare	No. Species and habitat were not observed during field surveys.
Mud sedge	*Carex limosa*	Rare	No. Species and habitat were not observed during field surveys.
Bunchberry, dwarf dogwood	*Cornus canadensis*	Rare	No. Species and habitat were not observed during field surveys.
Purple lady's slipper	*Cypripedium fasciculatum*	Rare	No. Species and habitat were not observed during field surveys.
Mountain bladderfern	*Cystopteris montana*	Rare	No. Species and habitat were not observed during field surveys.
Dwarf rattlesnake plantain	*Goodyera repens*	Rare	No. Species and habitat were not observed during field surveys.
Wood lily	*Lilium philadelphicum*	Rare	No. Species and habitat were not observed during field surveys.
Northern twayblade	*Listera borealis*	Rare	No. Species and habitat were not observed during field surveys.
Broadlipped twayblade	*Listera convallarioides*	Rare	No. Species and habitat were not observed during field surveys.
Heartleaf twayblade	*Listera cordata*	Rare	No. Species and habitat were not observed during field surveys.
Clubmoss	*Lycopodium annotinum*	Rare	No. Species and habitat were not observed during field surveys.
Purple cliffbrake	*Pellaea atropurpurea*	Rare	No. Species and habitat were not observed during field surveys.
Arrowhead colt's foot	*Petasites sagittatus*	Rare	No. Species and habitat were not observed during field surveys.
Pictureleaf wintergreen	*Pyrola picta*	Rare	Yes
Spring coralroot	*Corallorhiza wisteriana*	Rare	Yes

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Appendix C: Rutting Hazard

Haul Roads, Log Landings, and Soil Rutting on Forestland

This table can help forestland owners or managers plan the use of soils for wood crops. Interpretive ratings are given for the soils according to the limitations that affect various aspects of forestland management. The ratings are both verbal and numerical.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings,* the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings. *Well suited* indicates that the soil has features that are favorable for log landings and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for log landings. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for log landings. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forestland equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service, National forestry manual.

Report—Haul Roads, Log Landings, and Soil Rutting on Forestland

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Haul Roads, Log Landings, and Soil Rutting on Forestland–Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties							
Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6101A—Cryaquolls-Gateview family complex, 0 to 15 percent slopes							
Cryaquolls	50	Severe		Poorly suited		Severe	
		Stoniness	1.00	Wetness	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
		Dusty	0.01	Dusty	0.01		
Gateview family	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Landslides	0.10		
7102A—Cryaquepts-Cryaquolls complex, 0 to 15 percent slopes							
Cryaquepts	55	Severe		Poorly suited		Moderate	
		Stoniness	1.00	Wetness	1.00	Low strength	0.50
		Landslides	0.05	Slope	0.50		
				Landslides	0.05		
Cryaquolls	30	Severe		Poorly suited		Severe	
		Stoniness	1.00	Wetness	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
7700B—Leighcan family, 5 to 40 percent slopes							
Leighcan family	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.20	Landslides	0.20		

Haul Roads, Log Landings, and Soil Rutting on Forestland–Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties							
Map symbol and soil name	**Pct. of map unit**	**Limitations affecting construction of haul roads and log landings**		**Suitability for log landings**		**Soil rutting hazard**	
		Rating class and limiting features	**Value**	**Rating class and limiting features**	**Value**	**Rating class and limiting features**	**Value**
7700C—Leighcan family, 40 to 75 percent slopes							
Leighcan family	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	1.00	Rock fragments	1.00		
		Landslides	0.20	Landslides	0.20		
7701C—Leighcan family, 40 to 75 percent slopes, south aspects							
Leighcan family, south aspects	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.20	Landslides	0.20		
7709D—Leighcan family-Rock outcrop complex, 40 to 150 percent slopes, south aspects							
Leighcan family, south aspects	50	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.20	Landslides	0.20		
Rock outcrop	35	Not rated		Not rated		Not rated	
7710D—Leighcan family-Rock outcrop complex, 40 to 150 percent slopes							
Leighcan family	60	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.20	Landslides	0.20		
Rock outcrop	20	Not rated		Not rated		Not rated	

Haul Roads, Log Landings, and Soil Rutting on Forestland–Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties							
Map symbol and soil name	**Pct. of map unit**	**Limitations affecting construction of haul roads and log landings**		**Suitability for log landings**		**Soil rutting hazard**	
		Rating class and limiting features	**Value**	**Rating class and limiting features**	**Value**	**Rating class and limiting features**	**Value**
7755B—Leighcan-Catamount, moist families complex, 5 to 40 percent slopes							
Leighcan family	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.20	Landslides	0.20		
Catamount family, moist	40	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Slope	1.00	Strength	0.10
		Landslides	0.60	Landslides	0.60		
		Slope	0.50	Sandiness	0.50		
		Sandiness	0.50				
7756B—Catamount, moist-Leighcan families-Rock outcrop complex, 5 to 40 percent slopes							
Catamount family, moist	40	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Slope	1.00	Strength	0.10
		Landslides	0.60	Landslides	0.60		
		Slope	0.50	Sandiness	0.50		
		Sandiness	0.50				
Leighcan family	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.20	Landslides	0.20		
Rock outcrop	20	Not rated		Not rated		Not rated	

Haul Roads, Log Landings, and Soil Rutting on Forestland–Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties							
Map symbol and soil name	**Pct. of map unit**	**Limitations affecting construction of haul roads and log landings**		**Suitability for log landings**		**Soil rutting hazard**	
		Rating class and limiting features	**Value**	**Rating class and limiting features**	**Value**	**Rating class and limiting features**	**Value**
7757D—Leighcan-Catamount, moist families-Rock outcrop complex, 40 to 150 percent slopes							
Leighcan family	50	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	1.00	Rock fragments	1.00		
		Landslides	0.20	Landslides	0.20		
Catamount family, moist	25	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Landslides	0.60	Landslides	0.60		
				Sandiness	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
7790B—Lithic Cryorthents, subalpine-Rubble land complex, 5 to 40 percent slopes							
Lithic cryorthents, subalpine	60	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
		Restrictive layer	1.00	Landslides	0.35		
		Landslides	0.35				
Rubble land	25	Not rated		Not rated		Not rated	
8776B—Moran family-Lithic Cryorthents-Rubble land complex, 5 to 40 percent slopes							
Moran family	60	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
		Landslides	0.05	Landslides	0.05		
Lithic cryorthents	20	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
		Restrictive layer	1.00	Landslides	0.35		
		Landslides	0.35				
Rubble land	15	Not rated		Not rated		Not rated	

Haul Roads, Log Landings, and Soil Rutting on Forestland–Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties							
Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8776D—Moran family-Lithic Cryorthents-Rubble land complex, 40 to 150 percent slopes							
Moran family	45	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Landslides	0.20	Landslides	0.20		
Lithic cryorthents	30	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Landslides	1.00	Landslides	1.00		
Rubble land	20	Not rated		Not rated		Not rated	

Data Source Information

Soil Survey Area: Arapaho-Roosevelt National Forest Area, Colorado, Parts of Boulder, Clear Creek, Gilpin, Grand, Park and Larimer Counties
Survey Area Data: Version 3, Dec 23, 2013